The Pedestrian and Bicyclist Highway Safety Problem

As It Relates to the Hispanic Population in the United States

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FINAL REPORT

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Foreword

The overall goal of the Federal Highway Administration's (FHWA) Pedestrian and Bicycle Safety Research Program is to increase pedestrian and bicycle safety and mobility.

The following document describes the level of involvement of Hispanics in pedestrian and bicycle crashes.

Possible approaches for local pedestrian and bicycle safety programs targeting Hispanics are presented.

The results of this research will be useful to transportation researchers, engineers, planners and safety professionals involved in improving pedestrian and bicyclist safety and mobility.

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A. Project Background

The nature and extent of the Hispanic pedestrian and bicycle highway safety problem is not well known. It is apparent that a disproportionate number of the persons killed in highway crashes of all types are Hispanic immigrants. While the reasons for this over-involvement have not been determined, it has been suggested that cultural differences, language problems, and a lack of familiarity with traffic in the United States may be involved. (Braver, 2003)

Census data show that the Hispanic population is growing faster than any other group in the United States. The highway safety problems of Hispanics will only increase as more and more Hispanics immigrate to the U.S. Accordingly, the Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA) contracted with the Center for Applied Research, Inc. (CAR) and its subcontractor, The Media Network, Inc. (TMN).

B. Project Objectives

The contract objective was to determine the extent of the pedestrian and bicyclist highway safety problem as it relates to Hispanics.

The ultimate goal of this project was to provide Federal Highway Administration (FHWA) and National Highway Transportation Safety Administration (NHTSA) information for developing a marketing plan for pedestrian and bicycle safety messages for Hispanic audiences in the U.S.

C. Quantitative Data: Main Findings

Each year an average of 545 Hispanics are killed in pedestrian crashes. Hispanic pedestrians account for 16.3% of all pedestrian crashes nationwide.

Each year an average of 79 Hispanics are killed in bicycle crashes. Hispanic bicyclists account for 15.6% of all bicyclist crashes nationwide.

Most (77.3%) of the Hispanic pedestrian crashes involve Hispanics of Mexican or Central/South American origin. Hispanics from other areas are less involved in Hispanic pedestrian crashes.

Table 1: Average Annual Pedestrian & Bicyclist Fatalities by Hispanic Country of Origin

Country of Origin	Average Annual Pedestrian Fatalities		Average Annual Bicyclist Fatalities	
	Number	Percent	Number	Percent
Hispanics of Mexican Origin	353	64.8%	53	67.0%
Hispanics of Central/South American Origin	68	12.5%	10	12.7%
Hispanics of Puerto Rican Origin	31	5.7%	6	7.6%
Hispanics of Cuban Origin	30	5.5%	3	3.8%
Hispanics of European Spanish/Other Origin	63	11.6%	7	8.9%
Total Annual Hispanic Pedestrian Fatalities	545	100.0%	79	100.0%

Source: Fatal Accident Reporting System: 1999-2003

Most (79.7%) of the Hispanic bicycle crashes involve Hispanics of Mexican or Central/South American origin. Hispanics from other areas are less involved in Hispanic bicycle crashes.

Death rates are computed by dividing the number of deaths experienced by a group by the total population of that group. The Hispanic population in the U.S. has a higher pedestrian death rate than the non-Hispanic Whites but not as high as the non-Hispanic Blacks. The Hispanic population in the U.S. has a higher bicyclist death rate than non-Hispanic Whites but not as high as non-Hispanic Blacks:

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Table 2: Deaths & Death Rates by Ethnicity for Pedestrians & Bicyclists

Crash Category	Deaths & Death Rates By Ethnicity					
	Hispanic All Races		Non-Hispanic White		Non-Hispanic Black	
	Number Deaths	Death Rate	Number Deaths	Death Rate	Number Deaths	Death Rate
Pedestrians	1,071	2.88	3,527	1.78	1,073	3.01
Bicyclists	121	0.32	519	0.26	120	0.34

Source: Center for Disease Control: 2001 data

D. Partnership and Coalition Building: Main Findings

The Media Network (TMN) contacted over 100 Hispanic community-based organizations in New York, Miami, Los Angeles, and Washington, D.C. to learn more about the work these organizations are doing related to pedestrian and bicycle safety and to assess their overall interest in this topic. The goal was that these organizations would work in partnership with us to provide data regarding crash statistics, and to provide us with information on what actions, if any, are going on at the local level about this topic. The response from these organizations was disappointing, with many organizations not returning our calls. The organizations we were able to talk to generally did not have much information on this topic. A few provided reports, essays, or other documents with relevant information, or even personal stories about accidents they had witnessed or heard about. However, most organizations did not have such information. We did not find any significant Hispanic community-based local efforts related to pedestrian and bicycle safety.

E. Focus Group: Main Findings

Two focus groups, one for pedestrians and one for bicyclists, were held in each of four cities: Washington, D.C., Los Angeles, CA, Miami, FL, and New York City, NY. There were twenty-eight men and thirty-four women. All were of Hispanic origin. The focus group discussions were in Spanish.

The main findings from the focus groups are consistent with the findings from the partnership calls: Hispanics in these focus groups had not given much thought to these issues, but, when brought to their attention, they find them interesting and important. Participants were especially interested in the fact that Hispanics are overrepresented in pedestrian and bicycle accidents. The Hispanics in these groups see cultural differences as a main potential cause of accidents among Hispanics, and cite major differences in traffic laws and enforcement between Latino countries and the U.S. They report a general lack of education on these issues, and few Spanish-language sources of information. Basic information designed for Spanish speakers on this topic would be greatly appreciated and well received by these audience groups. Additionally, participants said that new immigrants are particularly in need of such information. Participants did not think any one particular group of Hispanics (e.g. Mexicans, Puerto Ricans, and Central Americans) was most at risk, however.

The main findings from the focus groups include:

■ There are significant cultural differences that affect how Hispanics behave as pedestrians and bicyclists in the United States. Participants told us that traffic rules are enforced more stringently in the United States than in Latino countries. They said that Hispanic neighborhoods in the U.S. are also more disorderly and that these neighborhoods may also be prone to more accidents.

- Many features of the U.S. traffic system appear to be somewhat unfamiliar to Hispanics. Participants told us that many signs are the same across cultures, but that signs that rely heavily on writing in English can be confusing. Participants also told us that traffic moves faster in the U.S. Crosswalks appear to be less common in Latino countries. Participants told us that new immigrants, in particular, are unfamiliar with U.S. traffic laws, placing them at potentially higher risk.

- While U.S. drivers were seen as more respectful of pedestrians and bicyclists than those in Latino countries, participants still complained about a lack of respect from drivers.

- Hispanic pedestrians and bicyclists reported that there is a lack of basic information on pedestrian and bicycle safety.

- Participants reported that they sometimes knowingly do things that put them at risk. For example, almost all participants in the pedestrian group had jaywalked, and many cyclists say they do not always stop when it is required.

- Participants do take some safety precautions, such as trying to be alert, making eye contact with drivers, or wearing safety gear (e.g. helmets for bicyclists) or brightly colored clothing. Some behaviors are more common than others are, however. For example, most bicyclists did not report wearing helmets.

- Pedestrians and bicyclists both cite automobiles as a primary cause of crashes and participants strongly believe that education on this topic needs to involve drivers as well as pedestrians and bicyclists.

- Crashes are likely underreported for Hispanic pedestrians and cyclists. Many participants cited fear of the police and illegal immigration status as reasons Hispanics may not contact the police.

- Children, senior citizens, and recent immigrants were all thought to be more at risk of getting in crashes than other groups because of their lack of awareness, lack of mobility, and lack of acculturation, respectively. Focus group members did not think that country of origin made a significant impact in pedestrian or cyclist behaviors. Participants in all four cities identified similar themes and issues.

- Focus Group members thought that additional education on this topic and fines would help to address this problem. They felt that Hispanics need to be educated concerning U.S. traffic and safety rules. This education should take the form of booklets, guides, advertising, and other information campaigns.

F. Conclusions and Recommendations

- Local pedestrian and bicycle safety programs targeted at Hispanics should focus on the specific pedestrian/bicyclist problems being experienced in each community. Pedestrian and bicycle safety problems in Hispanic communities may be different than those elsewhere. For example, the national pedestrian and bicyclist crash statistics suggest that Hispanic children are less involved than non-Hispanic children but that Hispanic young adults are more involved. It also appears that Hispanics of Mexican origin and Hispanics of Central/South American origin are more involved in pedestrian and bicyclist crashes. The role of alcohol in both pedestrian and bicyclist crashes should also be addressed.

- FHWA/NHTSA should consider designing and implementing campaigns for pedestrians, bicyclists, and drivers around the idea of "respect." This respect needs to flow mutually among all parties, and should include respect for the law as well. Such a campaign should be broadly targeted, but should include Hispanics and bilingual materials.

- Hispanics, and recent immigrants in particular, need information that is bilingual and that clearly explains common U.S. traffic laws, signs, rules, and behaviors. Such a guide should be available in Hispanic community centers, government offices, schools, and other locations.

- Information campaigns specifically for Hispanics should focus on the need to obey U.S. traffic laws such as stopping at lights and crossing only in crosswalks. Other topics that are likely to be of interest to Hispanics include information on how to use crosswalks and pedestrian/cyclists rights and responsibilities.

II. Background & Relevant Literature Review

A. Project Background

The nature and extent of the Hispanic pedestrian and bicycle highway safety problem is not well known. It is apparent that a disproportionate number of the persons killed in highway crashes of all types are Hispanic immigrants. While the reasons for this over-involvement are not known it has been suggested that cultural differences, language problems, and a lack of familiarity with traffic in the United States may be involved. (Braver, 2003)

Census data show that the Hispanic population is growing faster than any other group in the United States. The highway safety problems of Hispanics will only increase as more and more Hispanics immigrate to the U.S. Accordingly, the Federal Highway Administration (FHWA) and the National Highway Traffic Safety Administration (NHTSA) contracted with the Center for Applied Research, Inc. (CAR) and its subcontractor, The Media Network, Inc. (TMN).

B. Project Objectives

The contract had the following objectives:

1. Work with and form partnership/s with organization/s that understand/s the Hispanic roadway safety problem and have a working knowledge of such issues. These may include law enforcement organizations, health-related organizations, Hispanic groups (there are several U.S. organizations catering to the interests of Hispanics that could be a good resource for this project), etc. In order to get the needed information, the contractor will need to work with groups that have access to hospital data, as this information is not available to the general public.

2. Conduct research to determine the extent of the highway safety problem as it relates to Hispanics. Determine how big of a problem it is overall, but mainly in the two areas we wish to cover: Hispanics as pedestrians and Hispanics as bicyclists. Determine where the crashes, injuries, and fatalities lie (in each of the above-mentioned areas, and among what groups – these include Hispanics of Mexican origin, Hispanics of South American origin, Hispanics of Puerto Rican ancestry, and Hispanics of Cuban origin). Determine why these crashes, fatalities and injuries are occurring - i.e., language error, cultural differences, etc.

3. Develop a report that may be used for publication detailing the methodology and results of the research.

The ultimate goal of this project was be to provide FHWA and NHTSA information they could use in developing a marketing plan to tell the U.S. Department of Transportation and other interested organizations how to best market safety messages to Hispanic audiences in the U.S.

C. Relevant Literature

A 1995 NHTSA report, **Highway Safety Needs of the U.S. Hispanic Communities: Issues and Strategies**, addressed all of the highway safety issues facing Hispanics. Telephone and on-site discussions were held with representatives from highway safety, law enforcement, emergency medical, health, education and general services agencies in four areas. Nearly 50 focus groups with community members were conducted. They found that:

> "Most of the agency and organization representatives who participated in telephone discussions indicated that highway safety is not a major concern in any of the Hispanic communities targeted by the study. They mentioned housing, health care, employment and other economic issues, crime, gangs and domestic violence as issues with far greater priority."

Significantly, for this study, they presented a listing of the ten most frequently mentioned highway safety problems mentioned by agency and organization representatives. They had a similar list of the top ten highway safety problems mentioned by the focus group participants. Neither pedestrians nor bicyclists were mentioned on either list. Detailed discussions of other highway safety issues - such as drinking and driving, seat belts, older drivers, and child safety seats - were presented. There was no discussion of pedestrian or bicycle safety. There was a section entitled "Elderly Drivers and Pedestrians" but the word "pedestrian" appeared only in the title.

These findings are very similar to the ones uncovered in this project. As will be discussed in the section on Partnership and Coalition Building, very little interest in pedestrian and bicycle safety was found in the Hispanic community.

VOAS at al (1999) presented data on the relationship between ethnicity and crash involvement. Most of the data was from FARS and there is no need to describe it here because a similar analysis of more recent FARS data is described in a later section of this report. They did, however, present some interesting California state death certificate data for the year 1996. Caucasian Americans and Hispanic Americans had very similar death rates for traffic crashes (all crash types – not just pedestrian). The rates were 0.16 per 100,000 for Caucasians and 0.18 for Hispanics. They also had very similar death rates from assaults, falls, suicide and other accidents – 0.41 for Caucasians and 0.39 for Hispanics.

Dhillon at al (2001) examined pedestrian and bicycle crashes involving children in Long Beach, CA between January 1, 1992, and June 30, 1995. Police reports for 1,015 crashes were compared with 474 hospital records. A total of 379 cases were found in both data bases. They found that the hospital sources identified younger children, fewer bicyclists, more Hispanic and Asian children and fewer African-American children than the police

reports. This finding suggests that Hispanic children may be underrepresented in police reported crashes, at least in California with its relatively large proportion of illegal aliens who might want to avoid dealing with the police.

Campos-Outcalf et al (2002) examined pedestrian fatalities by race/ethnicity in Arizona using FARS data for 1990-1996. They found that American Indians were far more over-represented than either non-Hispanic Whites, Blacks, or Hispanics. The only other groups that showed significantly elevated rates compared to non-Hispanic Whites were Hispanic males under 5 years of age and Black females between 65 and 74 years of age.

Campos-Outcalf et al (2002) compared the motor vehicle crash fatality rates among different race/ethnic groups in rural and urban Arizona. They concluded that the American Indians had the highest crash rate. They found that Blacks and Hispanics did not have raised total motor vehicle fatality rates. Non-Hispanic Whites actually had higher rates in the rural areas of Arizona

The report **Pedestrian Safety in Crisis: Latino Deaths on the International Corridor (Gutierrez, 2003)** addresses pedestrian safety in the Langley Park/Long Branch/Takoma Park area of suburban Maryland. A total of seven Latino pedestrians were killed during a 14 month period. The majority of the pedestrians were not crossing at an intersection. Latinos are over-represented in pedestrian fatalities since only 11.5% of the county's population experienced 24.4% of the fatalities for 1997-1999. However, areas with high concentration of crashes, such as Silver Spring and Wheaton-Glenmont, also had a much higher percentage Latino population, 22% and 26% respectively. These percentages are very close to the percent of fatalities that were Latino- 24.4%.

Agran et al (1998) examined the family, social and cultural factors in pedestrian injuries among Hispanic children. They found that Hispanic children were over three times more involved in pedestrian crashes than non-Hispanic white children. A case-control study of Hispanic children in the Southwest U.S. was conducted with 98 children 0-14 years of age who were hospitalized because of a pedestrian injury. The controls were 144 randomly selected children matched to the case by city, age, gender and ethnicity. Using conditional logistic regression, they found that the following family and cultural characteristics were associated with an increased risk of injury:

- Household crowding
- Persons per room
- One or more family moves in the last year
- Poverty
- Parental illiteracy

These results suggest that pedestrian safety materials need to be culturally sensitive and designed for those with limited reading skills.

Christottel (1996) showed a relationship between the lack of family cohesion, divorce, single family homes, etc., and the greater involvement in pedestrian crashes among children from those homes. Similarly, **Cagley (1992)** showed a negative correlation between income and pedestrian crashes. Poorer neighborhoods were about 4 times more likely to experience pedestrian crashes than the more wealthy neighborhoods.

Gresham et al (2001) used a randomized pre-test and post-test comparative design to evaluate an injury prevention program for 1st, 2nd and 3rd grade children. The program (Think First for Kids – TFFK) addresses sports, vehicle crashes, falls, drowning and pedestrian injuries. They found that the TFFK program resulted in a significant increase in knowledge about safe behaviors. Although Hispanic and Black children displayed the lowest baseline test scores, they had the largest absolute improvement in post-test scores. This indicates that pedestrian safety programs targeting Hispanic children should be especially effective.

III. Quantitative Data Analysis

The quantitative data analysis effort focused on determining the extent of the involvement of Hispanics in both pedestrian and bicycle crashes. It was of course, necessary to restrict the analysis to those databases that included race/ethnicity as a data element. In an effort to understand some of the reasons for Hispanic involvement in crashes, a limited examination of the 2000 U.S. Census was done to identify possible crash risk factors. In order to see if there are any major differences in crash involvement that may be attributable to country of origin, some of the crash data was examined in specific geographical areas that tend to have concentrations of Hispanics from specific countries/areas.

The following areas were identified to focus on four specific Hispanic sub-groups:

Country of Origin	Area
Hispanics of Mexican Origin	California
Hispanics of Central/South American Origin	Washington, DC, Maryland, Virginia
Hispanics of Cuban Origin	Florida
Hispanics of Puerto Rican Origin	New York, New Jersey

It is recognized that these area/county of origin matchings are not perfect. The Hispanic populations in all these areas include those from a number of different countries. However, it is still worthwhile examining the different geographical areas to determine if any of the crash factors are related to country of origin.

Exposure issues involving Hispanic pedestrians and bicyclists are discussed in the next section. While reading the exposure issue section, the reader is advised to keep in mind two other issues that are very relevant to Hispanic pedestrian/bicyclist exposure statistics: illegal immigrants and unreported crashes.

Illegal immigrants. The possible influence of illegal immigrants is a difficult but potentially very important issue. Ethnicity crash rates that are presented throughout this report are based on the number of individuals of a given ethnicity that responded to the U.S. Census. There is an unknown but reasonably large proportion of the Hispanic population that is "undocumented" or "illegal aliens." Typically these individuals do not participate in U.S. Census reporting and therefore are not included in the population numbers published by the Census. This means that there are more Hispanics in the U.S. than are reported by the U.S. Census. Thus, the crash rate data that is computed by dividing the number of crashes by the population – i.e., deaths per 100,000 people – is an

over-representation of the actual crash risk because the population of people at risk is actually larger than the "official" numbers we use.

Unreported crashes. Unreported crashes are another issue that is important in pedestrian and bicyclist safety, in general, and especially important relative to Hispanic pedestrian/bicyclist safety. Unreported pedestrian/bicyclist crashes involve collisions between motor vehicles and pedestrians/bicyclists that are not reported to the police. About three quarters of the hospitalized victims of pedestrian and bicyclist motor crashes are identified with an official motor vehicle crash report. Some of the crashes not reported to the police are because they occur on private property, e.g., a parking lot, and a police report is not required. Some crashes are not reported because the injured pedestrian or bicyclist chooses not to call the police. It is believed that Hispanics in general and undocumented aliens, in particular, are far less likely to call the police when they are involved in a pedestrian/bicyclist crash than documented residents. However, the degree to which this conjecture is true is not known. If, in fact, Hispanics are involved in more unreported pedestrian/bicyclist crashes than other ethnicities, then the numbers reported in the following section are an under-representation of the actual Hispanic pedestrian and bicyclist crash problem.

A related issue involves the difficulty in determining ethnicity of those involved in a crash from the crash report. Most city and state police crash reports do not indicate the ethnicity of the participants - either pedestrians, bicyclists or drivers - on their crash report forms. The lack of this critical data in many data files makes it difficult to evaluate the role of ethnicity in crash involvement.

In summary, when considering the crash statistics that follow, the reader is advised to consider the role that illegal, undocumented aliens (i.e., population under-reporting) and unreported crashes (crash under-reporting) may have on both the crash rates and on the absolute crash numbers.

The following four data sets will be discussed:

■ Exposure and Other Crash Risk Factors

■ Fatal Accident Reporting System (FARS) Data - Fatal Pedestrians & Bicyclist Crashes by Ethnicity. FARS data examined include the following ethnicity categories:

> Non-Hispanic White
> Non-Hispanic Black
> Non-Hispanic Other
> Hispanic-Mexican Origin
> Hispanic-Puerto Rican Origin
> Hispanic-Cuban Origin
> Hispanic-Central/South American Origin
> Hispanic-European Spanish or Other Origin

- Center for Disease Control (CDC) Data – Pedestrian and Bicyclist Deaths and Rates per 100,000 Populations by Ethnicity. The analysis includes the following categories:

    Non-Hispanic White
    Non-Hispanic Black
    Hispanic

- Miami/Dade County Data. Analysis of Pedestrian Crashes in Miami/Dade County 1996-2000 by Ethnicity. Crash files use the following ethnicity categories:

    Not Hispanic White
    Not Hispanic Black
    Hispanic

A. Exposure and Other Crash Risk Factors.

While examining the pedestrian and bicycle crash experience of Hispanics it is important to remember a number of other important group characteristics. Hispanics, as a group, have a lower per capita income and a lower educational level. This limits greatly their transportation and housing options. They, therefore, tend to live in more densely developed urban areas with more vehicular traffic. These are the kind of areas that historically have had a disproportionate number of pedestrian and bicycle crashes.

Table 3 (next page) shows several crash risk factors for the Hispanics and White populations of the U.S. It is based on the 2000 U.S. Census. Factors are shown for the entire U.S. as well as seven states. Hispanics are 2.4 times more likely to live in a home with no vehicle available than Whites. As shown, 17.2% of Hispanic households do not have a vehicle available. Nearly 9% of Hispanics take public transportation to work – three times that of the White population. Using public transit typically involves walking to and from transit stops and crossing major arterials. Hispanics are 1.5 times more likely to walk to work and 2.3 times more likely to bike to work. Although there is some variation between the seven sets of state data, no remarkable differences are apparent.

The National Survey of Pedestrian and Bicyclist Attitudes and Behaviors (2002) provides some insight into the walking behavior of Hispanics and non-Hispanics. The following data was presented on the number of walking trips on the last day that they walked:

| | Average Number |
Ethnicity	of Walking Trips
Non-Hispanic Black	1.9
Hispanic	1.8
Non-Hispanic White	1.6

Hispanics walk more than non-Hispanic Whites but not as much as non-Hispanic Blacks. This increased walking leads to increased exposure and may explain some of the Hispanic over-involvement in pedestrian crashes.

Table 3 - Crash Risk Factors for the Hispanic and White U.S. Population

Crash Risk Factors for the Hispanic and White U.S. Population								
Geographical Area	% of Housing Units with no Vehicle		% of Workers:					
			Use Public Transpotation		Walk to Work		Bike To Work	
	Hispanic	White	Hispanic	White	Hispanic	White	Hispanic	White
United States	17.2%	7.3%	8.9%	2.9%	4.0%	2.6%	0.7%	0.3%
California	13.5%	6.9%	7.6%	3.1%	3.6%	2.5%	1.0%	0.8%
District of Columbia	46.1%	25.9%	40.7%	29.1%	11.8%	17.5%	1.1%	2.2%
Florida	11.7%	6.0%	3.5%	0.8%	2.0%	1.5%	0.6%	0.5%
Maryland	12.8%	6.9%	13.6%	3.7%	3.7%	2.3%	0.3%	0.2%
New Jersey	27.0%	8.2%	15.5%	6.5%	6.8%	2.3%	0.7%	0.2%
New York	56.7%	19.4%	44.1%	15.0%	9.4%	5.3%	0.6%	0.3%
Virginia	10.0%	5.3%	8.1%	2.7%	4.3%	2.0%	0.3%	0.2%
Source: U.S. Census Data: 2000								

When examining the crash data that follows, it is critical that the role of these kinds of risk factors be considered. In many instances the data indicates that Hispanics may be over-involved in certain types of crashes. It is important to remember that it is not known if this involvement is due to the environmental factors, socio-economic factors, or simply because of language or cultural factors associated with the crash victim being Hispanic.

B. Fatal Accident Reporting System (FARS) Data.

The National Highway Traffic Safety Administration (NHTSA) maintains a database of all fatal traffic crashes in the U.S. This data, the Fatal Accident Reporting System (FARS) was examined to determine the nature and extent of the Hispanic pedestrian and bicycle safety problem. Since 1999, FARS has included a data element to describe the race/ethnicity of the crash victim. For this report, FARS bicycle and pedestrian data was examined from 1999 through 2003. The subsequent analyses combine the data to maximize the available sample. The following data will be presented:

   Pedestrian Fatalities by Ethnicity and Year, 1999-2003
   Male Pedestrian Fatalities by Ethnicity and Pedestrian Age
   Female Pedestrian Fatalities by Ethnicity and Pedestrian Age
   Alcohol-related Pedestrian Fatalities by Ethnicity and Gender
   Bicycle-related Fatalities by Ethnicity and Year, 1999-2003
   Bicycle-related Fatalities by Ethnicity and Bicyclist Age
   Alcohol-related Bicycle Fatalities by Ethnicity and Bicyclist Age

The reader is cautioned that many of the percentages shown in the tables that follow are based on relatively small numbers. As such, they should be interpreted very carefully.

1. Pedestrian Fatalities (FARS)

Two kinds of FARS data will be presented in this section. The first describes characteristics of the pedestrians involved in the crashes – i.e., ethnicity, age, gender, alcohol involvement, etc. The second kind of data variables involve the crash itself, i.e., time of day, site characteristics, etc. These variables are called Accident Level Variables.

a. Pedestrian Characteristics

Table 4 shows the annual pedestrian fatalities for 1999-2003 for the different ethnic groups. The percentages show the percent of that year's fatalities in each ethnicity category. Overall, Hispanics were involved in 16.3% of the pedestrian fatalities for 1999-2003. This percent has varied from a high of 19% in 2001 to a low of 11.4% in 2002. Within the Hispanic sub-groups those of Mexican origin account for the majority of the fatalities – 10.5% of the national total.

Table 4: Pedestrian Fatalities by Ethnicity

Ethnicity	Year										Total	
	1999		2000		2001		2002		2003			
	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	2,045	56.3%	2,032	58.3%	2,244	56.6%	1,691	62.8%	1,808	60.7%	9,820	58.6%
Non-Hispanic Black	710	19.5%	668	19.2%	731	18.4%	567	21.1%	551	18.5%	3,227	19.3%
Non-Hispanic Other	226	6.2%	224	6.4%	235	5.9%	129	4.8%	169	5.7%	983	5.9%
Mexican Origin	444	12.2%	368	10.6%	521	13.1%	181	6.7%	250	8.4%	1,764	10.5%
Puerto Rican origin	35	1.0%	45	1.3%	41	1.0%	15	0.6%	21	0.7%	157	0.9%
Cuban origin	34	0.9%	33	0.9%	30	0.8%	22	0.8%	30	1.0%	149	0.9%
Central or South American origin	72	2.0%	66	1.9%	93	2.3%	31	1.2%	76	2.6%	338	2.0%
European Spanish or Other Hispanic origin	67	1.8%	49	1.4%	69	1.7%	57	2.1%	73	2.5%	315	1.9%
Total	3,633	100.0%	3,485	100.0%	3,964	100.0%	2,693	100.0%	2,978	100.0%	16,753	100.0%

Source: Fatal Accident Reporting System: 1999-2003

The next most frequently involved subgroups were those of Central and South American origin – 2.0%, and European/Spanish/Other – 1.9%. Although one might hypothesize that the recent increase in immigration of Hispanics from Mexico and South/Central America would result in an increase in pedestrian fatalities, such does not appear to be true. If anything, the involvement of those of Mexican origin may have declined in the past two years.

Figure 1 shows the pedestrian fatality data by ethnicity graphically. It is readily apparent that Hispanics of Mexican origin account for the majority of the Hispanic fatalities. The next largest sub-group, Hispanics of Central/South American origin, account for 2% of the pedestrian fatalities nationally. Together, Hispanics of Mexican and Central/South American origin account for 2,102 out of the 2,723 Hispanic fatalities – 77%.

Figure 1 - Pedestrian Fatalities by Ethnicity

Pedestrian Fatalities By Ethnicity 1999 - 2003

Cuban origin
149 1%

Central or South American origin
338 2%

European Spanish or Other Hispanic origin
315 2%

Puerto Rican origin 157 1%

Mexican Origin
1,764 11%

Non-Hispanic Other 983 6%

Non-Hispanic White
9,820 58%

Non-Hispanic Black
3,227 19%

Legend:
- Non-Hispanic White
- Non-Hispanic Black
- Non-Hispanic Other
- Mexican Origin
- Puerto Rican origin
- Cuban origin
- Central or South American origin
- European Spanish or Other Hispanic origin

Source: Fatal Accident Reporting System: 1999-2003

Table 5 (next page) shows the ethnicity and gender of the 16,753 pedestrian fatalities occurring from 1999-2003. Some interesting patterns are evident. Of all pedestrian fatalities nationwide, 69.7% are male. By contrast, 77.2% of the Hispanic fatalities were male, while 67.3% of the non-Hispanic Whites were male. Differences are also apparent among the various subgroups of Hispanics. Only 66.2% of those of Puerto Rican origin and 70.5% of those of Cuban origin are male. Those of Central/South American origin (75.4%), Mexican origin (78.7%) and European Spanish/Other Hispanic origin (79.7%) tend to have more male pedestrian fatalities.

Table 5 Pedestrian Fatalities by Ethnicity & Gender

Pedestrian Fatalities by Ethnicity & Gender						
	Males		Females		Both Genders	
Ethnicity	N	%	N	%	N	%
Non-hispanic White	6,613	67.3%	3,206	32.7%	9,819	100.0%
Non-hispanic Black	2,330	72.2%	896	27.8%	3,226	100.0%
Non-hispanic Other	623	63.4%	360	36.6%	983	100.0%
Hispanic - All	2,103	77.2%	620	22.8%	2,723	100.0%
Total	11,669	69.7%	5,082	30.3%	16,751	100.0%

Pedestrian Fatalities by Ethnicity Sub-Group & Gender						
	Males		Females		Both Genders	
Ethnicity	N	%	N	%	N	%
Non-Hispanic White	6,613	67.3%	3,206	32.7%	9,819	100.0%
Non-Hispanic Black	2,330	72.2%	896	27.8%	3,226	100.0%
Non-Hispanic Other	623	63.4%	360	36.6%	983	100.0%
Mexican Origin	1,388	78.7%	376	21.3%	1,764	100.0%
Puerto Rican origin	104	66.2%	53	33.8%	157	100.0%
Cuban origin	105	70.5%	44	29.5%	149	100.0%
Central or South American origin	255	75.4%	83	24.6%	338	100.0%
European Spanish or Other Hispanic	251	79.7%	64	20.3%	315	100.0%
Total	11,669	69.7%	5,082	30.3%	16,751	100.0%

Source: Fatal Accident Reporting System: 1999-2003

Since it appears that gender may play a role in Hispanic pedestrian fatalities, the examination of the variable, age, is being examined separately for males and females. Table 6 shows the distribution of male pedestrian fatalities by age and ethnicity. Overall, all Hispanics are somewhat over-represented (like the non-Hispanic Blacks) among those under 6 years of age (4.0% of Hispanic fatalities vs. 2.2% of non-Hispanic White fatalities). Hispanics from 6-15 years (4.5%) are under-represented relative to non-Hispanic White (5.7%). The age category showing the largest Hispanic over-representation is the 21-29 age group - 19.3% of the Hispanic fatalities are in that group vs. 11.6% of the non-Hispanic Whites. Further examination of the country of origin data shows that this over-involvement is due to the over-involvement of males of Mexican origin (20.0%) and of Central/South American origin (25.5%). Although the absolute number is relatively small (56 fatalities in 5 years), it is interesting that over one-half (53.3%) of the Hispanics of Cuban origin fatalities involve pedestrians 60 and older. This is far higher than the nationwide total (21.1%) or the 24.3% in the 60+ age group of non-Hispanic Whites.

Table 6 - Male Pedestrian Fatalities by Ethnicity and Age

Male Pedestrian Fatalities by Ethnicity & Age															
	Age Category													Total	
	<6		6-15		16-20		21-29		30-59		60+		Unknown			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	144	2.2%	376	5.7%	402	6.1%	765	11.6%	3,287	49.7%	1,606	24.3%	33	0.5%	6,613	100.0%
Non-Hispanic Black	137	5.9%	223	9.6%	124	5.3%	218	9.4%	1,286	55.2%	326	14.0%	16	0.7%	2,330	100.0%
Non-Hispanic Other	18	2.9%	20	3.2%	52	8.3%	85	13.6%	270	43.3%	176	28.3%	2	0.3%	623	100.0%
Hispanic - All	84	4.0%	94	4.5%	136	6.5%	406	19.3%	991	47.1%	359	17.1%	33	1.6%	2,103	100.0%
Total	383	3.3%	713	6.1%	714	6.1%	1,474	12.6%	5,834	50.0%	2,467	21.1%	84	0.7%	11,669	100.0%

Male Pedestrian Fatalities by Ethnicity Sub-Group & Age															
	Age Category													Total	
	<6		6-15		16-20		21-29		30-59		60+		Unknown			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	144	2.2%	376	5.7%	402	6.1%	765	11.6%	3,287	49.7%	1,606	24.3%	33	0.5%	6,613	100.0%
Non-Hispanic Black	137	5.9%	223	9.6%	124	5.3%	218	9.4%	1,286	55.2%	326	14.0%	16	0.7%	2,330	100.0%
Non-Hispanic Other	18	2.9%	20	3.2%	52	8.3%	85	13.6%	270	43.3%	176	28.3%	2	0.3%	623	100.0%
Mexican Origin	65	4.7%	72	5.2%	100	7.2%	278	20.0%	654	47.1%	207	14.9%	12	0.9%	1,388	100.0%
Puerto Rican origin	4	3.8%	9	8.7%	4	3.8%	13	12.5%	50	48.1%	24	23.1%	0	0.0%	104	100.0%
Cuban origin	2	1.9%	1	1.0%	2	1.9%	6	5.7%	35	33.3%	56	53.3%	3	2.9%	105	100.0%
Central or South American origin	3	1.2%	4	1.6%	15	5.9%	65	25.5%	116	45.5%	42	16.5%	10	3.9%	255	100.0%
European Spanish or Other Hispanic origin	10	4.0%	8	3.2%	15	6.0%	44	17.5%	136	54.2%	30	12.0%	8	3.2%	251	100.0%
Total	383	3.3%	713	6.1%	714	6.1%	1,474	12.6%	5,834	50.0%	2,467	21.1%	84	0.7%	11,669	100.0%

Source: Fata Accident Reporting Sysem : 1999-2003

The number of male pedestrian fatalities by ethnicity and age category is shown in Figure 2. The relatively large numbers of Hispanics 21-29, 30-59 and 60+ involved in fatal crashes is apparent. The similarity in patterns in the various age groups is illustrated as is the relative over-involvement of Hispanics 21-29 years.

Figure 2 - Male Pedestrian Fatalities by Ethnicity and Age Category
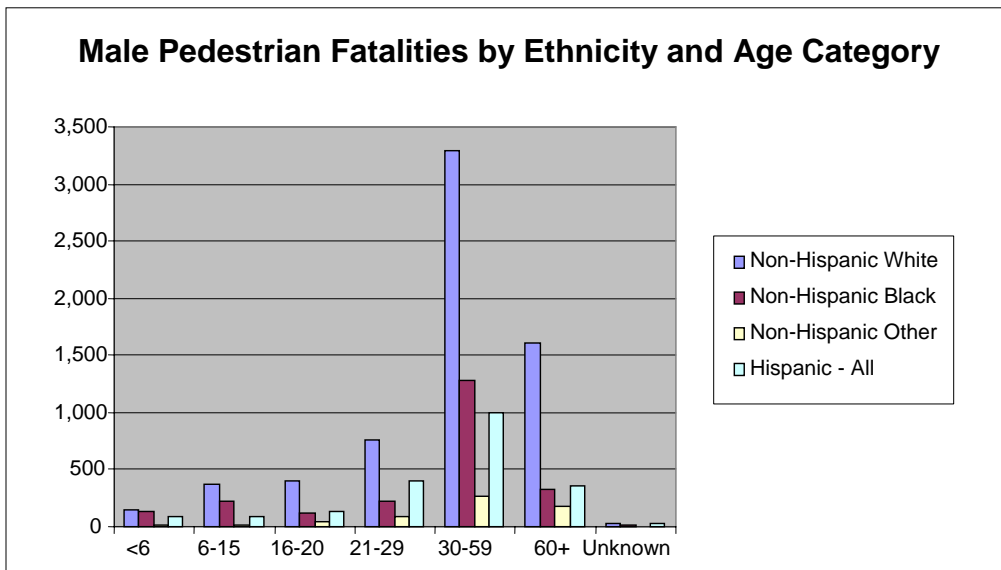
Source: Fatal Accident Reporting System: 1999-2003

Table 7 shows the distribution of female pedestrian fatalities by age and ethnicity. Like the distribution for males, the female Hispanics are much higher (8.9%) for pedestrians under 6 years of age. This is due largely to the large number of Hispanics of Mexican origin in this group. Unlike the Hispanic males, Hispanic females do not show an over-involvement in the 21-29 age group. Otherwise, the involvement, by age category of female Hispanics is similar to that of the non-Hispanic Whites.

Table 7 - Female Pedestrian Fatalities by Ethnicity and Age

Female Pedestrian Fatalities by Ethnicity and Age																
	Age Category														Total	
	<6		6-15		16-20		21-29		30-59		60+		Unknown			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	85	2.7%	257	8.0%	174	5.4%	263	8.2%	1,274	39.7%	1,143	35.7%	10	0.3%	3,206	100.0%
Non-Hispanic Black	74	8.3%	127	14.2%	50	5.6%	89	9.9%	438	48.9%	114	12.7%	4	0.4%	896	100.0%
Non-Hispanic Other	17	4.7%	21	5.8%	9	2.5%	31	8.6%	129	35.8%	153	42.5%	0	0.0%	360	100.0%
Hispanic - All	55	8.9%	50	8.1%	35	5.6%	52	8.4%	243	39.2%	184	29.7%	1	0.2%	620	100.0%
Total	231	4.5%	455	9.0%	268	5.3%	435	8.6%	2,084	41.0%	1,594	31.4%	15	0.3%	5,082	100.0%

Female Pedestrian Fatalities by Ethnicity Sub-Group & Age																
	Age Category														Total	
	<6		6-15		16-20		21-29		30-59		60+		Unknown			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	85	2.7%	257	8.0%	174	5.4%	263	8.2%	1,274	39.7%	1,143	35.7%	10	0.3%	3,206	100.0%
Non-Hispanic Black	74	8.3%	127	14.2%	50	5.6%	89	9.9%	438	48.9%	114	12.7%	4	0.4%	896	100.0%
Non-Hispanic Other	17	4.7%	21	5.8%	9	2.5%	31	8.6%	129	35.8%	153	42.5%	0	0.0%	360	100.0%
Mexican Origin	46	12.2%	34	9.0%	27	7.2%	41	10.9%	141	37.5%	86	22.9%	1	0.3%	376	100.0%
Puerto Rican origin	4	7.5%	2	3.8%	3	5.7%	6	11.3%	24	45.3%	14	26.4%	0	0.0%	53	100.0%
Cuban origin	0	0.0%	0	0.0%	1	2.3%	0	0.0%	9	20.5%	34	77.3%	0	0.0%	44	100.0%
Central or South American origin	3	3.6%	3	3.6%	3	3.6%	3	3.6%	38	45.8%	33	39.8%	0	0.0%	83	100.0%
European Spanish or Other Hispanic origin	2	3.1%	11	17.2%	1	1.6%	2	3.1%	31	48.4%	17	26.6%	0	0.0%	64	100.0%
Total	231	4.5%	455	9.0%	268	5.3%	435	8.6%	2,084	41.0%	1,594	31.4%	15	0.3%	5,082	100.0%

Source: Fatal Accident Reporting system: 1999-2003

The country of origin data underlines the fact that Hispanics of Mexican origin account for 61% of all female Hispanic fatalities and are over-represented in the 4 younger age categories. Interestingly, the over-representation of older Cuban males seen earlier is repeated here with 77.3% of the Cuban Hispanic female pedestrian fatalities 60 or older. Please note, however, that there are only 44 female Cuban pedestrian fatalities in this 5-year period.

Figure 3 shows graphically the data on female pedestrian fatalities by age and ethnicity. The patterns just discussed are apparent. Especially notable is the fact that the Hispanic females 30-59 and over 60 account for most (68.9%) of the Hispanic female pedestrian fatalities.

Figure 3 - Female Pedestrian Fatalities by Ethnicity and Age Categories
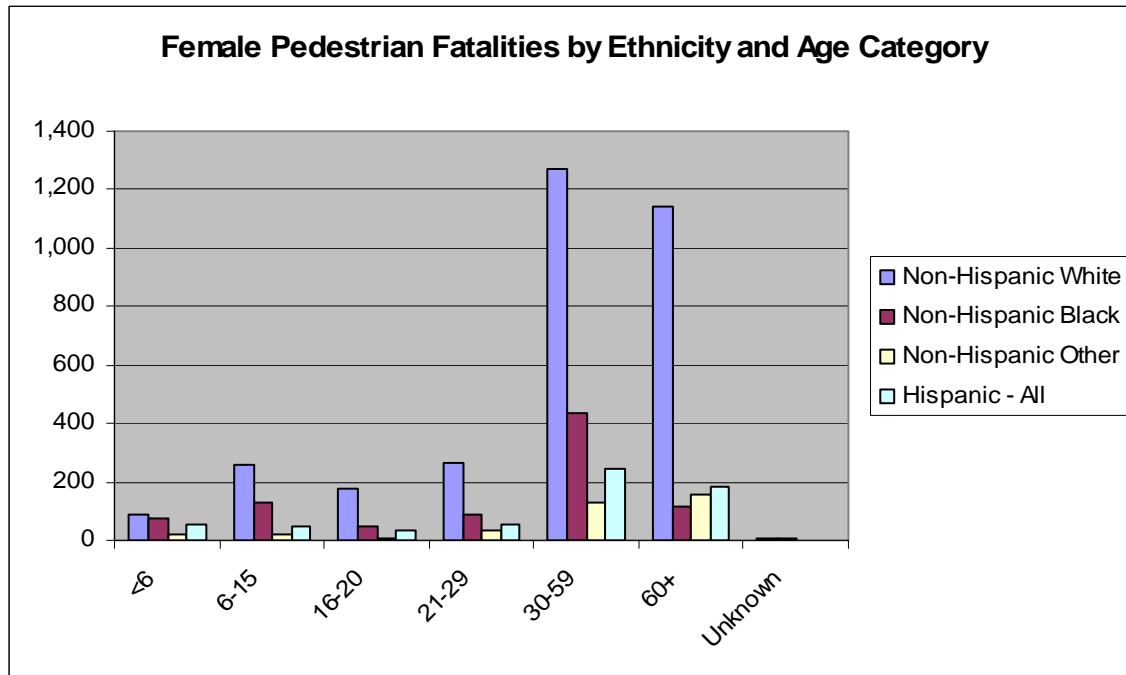
Alcohol involvement was either "not reported" or "unknown" in about one-half (57%) of the pedestrian fatalities from 1999 to 2003. In the remaining 43% of the crashes, alcohol involvement was determined to be a factor in about 16% and determined not to be a factor in about 27% of the crashes.

Table 8 shows the alcohol-related fatalities by ethnicity and gender. Of the 16,751 fatalities, 2,725 (16.3%) were found to have alcohol involvement on the part of the pedestrian.

Table 8 - Alcohol-Related Pedestrian Fatalities by Ethnicity and Gender

Alcohol Related Pedestrian Fatalities by Ethnicity & Gender								
	Males			Females			Both Genders		
	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals
Ethnicity	N	%	N	N	%	N	N	%	N
Non-Hispanic White	1,197	18.1%	6,613	342	10.7%	3,206	1,539	15.7%	9,819
Non-Hispanic Black	354	15.2%	2,330	90	10.0%	896	444	13.8%	3,226
Non-Hispanic Other	183	29.4%	623	48	13.3%	360	231	23.5%	983
Hispanic - All	467	22.2%	2,103	44	7.1%	620	511	18.8%	2,723
TOTAL	2,201	18.9%	11,669	524	10.3%	5,082	2,725	16.3%	16,751

	Males			Females			Both Genders		
	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals
Ethnicity	N	%	N	N	%	N	N	%	N
Non-Hispanic White	1,197	18.1%	6,613	342	10.7%	3,206	1,539	15.7%	9,819
Non-Hispanic Black	354	15.2%	2,330	90	10.0%	896	444	13.8%	3,226
Non-Hispanic Other	183	29.4%	623	48	13.3%	360	231	23.5%	983
Mexican Origin	325	23.4%	1,388	31	8.2%	376	356	20.2%	1,764
Puerto Rican origin	12	11.5%	104	1	1.9%	53	13	8.3%	157
Cuban origin	7	6.7%	105	2	4.5%	44	9	6.0%	149
Central or South American origin	39	15.3%	255	4	4.8%	83	43	12.7%	338
European Spanish or Other Hispanic origin	84	33.5%	251	6	9.4%	64	90	28.6%	315
TOTAL	2,201	18.9%	11,669	524	10.3%	5,082	2,725	16.3%	16,751

Source: Fatal Accident Reporting System: 1999-2003

In addition, it is important to report that there were large differences in the percentage not reported/unknown by ethnicity. This varied from a low percentage unknown/unreported of 38.9% for Hispanics of Cuban origin to 67.5% for Hispanics of Puerto Rican origin. It is not known if the variability in unknown/unreported alcohol level is related to the ethnicity of the pedestrian or the geographic area where the pedestrian lives – e.g., many of the Cubans were in the Miami area. The coroners' offices in different areas have different policies when it comes to testing the alcohol level of fatally injured pedestrians.

The percentage unknown/not reported for the largest Hispanic sub-group, those of Mexican origins, is 58.5%. This is between the comparable percentage of non-Hispanic White (55.6%) and non-Hispanic Black (62.7%) pedestrians.

In spite of these potential issues with the alcohol involvement data, it nevertheless provides some insights into the nature of the Hispanic pedestrian problem. The numbers reported here are based on the 43% of the fatalities for which alcohol involvement data was available. Thus, the percentages shown are an underestimate of the actual alcohol involvement. If one assumes that the unreported/unknown cases have the proportion of alcohol involvement as the cases for which data is available, the alcohol involvement

rates would be about twice the percentages reported here. In terms of ethnicity, the Hispanic pedestrians had higher (18.8%) alcohol involvement that either the non-Hispanic Whites (15.7%) or the non-Hispanic Blacks (13.8%). The percentages for the 'non-Hispanic: Other' is high (23.5%) because that group includes American Indians, a group with a long recognized alcohol/pedestrian safety problem.

The role of gender in the Hispanic alcohol problem is apparent. Hispanic females have lower (7.1%) alcohol involvement than any other ethnicity. Hispanic men have the second highest involvement (22.2%) surpassed only by the male 'non-Hispanic: Other' group, which includes American Indians.

The alcohol involvement in the various ethnic subgroups is very interesting. Male Hispanics classified as European Spanish/Other have an alcohol involvement rate of 33.5%, although the number in the group (N=84) is small. The male Hispanic pedestrian of Mexican origin has an alcohol involvement rate of 23.4%; they are largely responsible for the high alcohol involvement rate of the entire group. Hispanics of Puerto Rican, Cuban, and Central/South American origin all have alcohol involvement rates below that of non-Hispanic Whites.

Female Hispanic pedestrians in all the Hispanic sub-groups have a very low alcohol rate, almost all less than one-half that of non-Hispanic White females and non-Hispanic Black females. Clearly, drinking by Mexican-Americans is an issue to be addressed in future pedestrian safety campaigns.

b. Pedestrian Crash Characteristics/Accident Level Variables.

The FARS database contains a number of variables that describe characteristics of the crash itself, i.e., weather, roadway characteristics, etc. This section includes cross-tabulations of these variables for the major ethnicity groups – Non-Hispanic Whites, Non-Hispanic Blacks, and Hispanics. Table 9 (next page) contains distributions of the following variables for each of the three major ethnic groups:

> Roadway/Area Type
> Surface condition
> Light Condition
> Roadway Classification
> Number of Lanes
> Relation to Junction
> Posted Speed Limit
> Traffic Controls Present

These variables were selected because they either provide insight into the nature of Hispanic pedestrian crashes or because they highlight potential differences between the pedestrian crash experience of Whites, Blacks and/or Hispanics. A number of other "accident level" variables in the FARS database were also examined but were found to provide no additional useful information or insights. These variables were:

> Route Signing
> Manner of Collision
> Relation to Roadway
> Trafficway Flow
> Roadway Alignment
> Roadway Profile
> Roadway Surface Type
> Construction/Maintenance Zone
> Traffic Control Functioning
> Atmospheric Conditions
> Hit and Run
> School Bus Related
> Emergency Medical Services Information

The first pedestrian crash characteristic variable shown in Table 9 is Roadway/Area Type. About a third of the Non-Hispanic White pedestrian fatalities occur in rural areas. By contrast, about a quarter of the non-Hispanic Black pedestrians and one-fifth of the Hispanic pedestrians are killed in rural areas. The Hispanic pedestrian problem has more of an urban focus than that of the other ethnicities.

Table 9: Selected Accident Level Variables for Pedestrian Fatalities by Ethnicity

Variable	Non-Hispanic White N=9820	Non-Hispanic Black N=3227	Hispanic N=2723
Selected Accident Level Variables for Pedestrian Fatalities by Ethnicity			
	Percentage of Crashes		
Roadway/Area Type			
Urban	64.4 %	73.3 %	79.9 %
Rural	35.6 %	26.7 %	20.1 %
Surface Condition			
Dry	83.9 %	85.7 %	89.2 %
Wet	13.6 %	13.0 %	9.2 %
Snow or Ice	1.9 %	0.7 %	0.7 %
Other/Unknown	0.6 %	0.6 %	0.9 %
Light Condition			
Daylight	31.9 %	27.0 %	25.4 %
Dark - No Lighting	35.8 %	34.1 %	30.8 %
Dark - Lighting	28.3 %	35.6 %	40.0 %
Other/Unknown	3.9 %	3.3 %	3.9 %
Roadway Classification			
Arterials - Rural	17.8 %	11.9 %	10.0 %
Collectors - Rural	9.7 %	7.9 %	4.7 %
Local Road - Rural	7.3 %	6.1 %	5.0 %
Major Arterials - Urban	34.5 %	32.8 %	40.9 %
Minor Arterials - Urban	13.4 %	14.2 %	17.8 %
Collectors - Urban	3.3 %	4.4 %	3.6 %
Local Streets - Urban	12.0 %	20.4 %	16.9 %
Other/Unknown	2.0 %	2.3 %	1.1 %
Number of Lanes			
Two or less	66.7 %	59.1 %	58.4 %
Three	10.3 %	12.0 %	14.0 %
Four	15.9 %	21.1 %	19.2 %
Five or more	4.8 %	5.3 %	6.2 %
Unknown	2.2 %	2.4 %	2.3 %
Posted Speed Limit			
25 or less	9.1 %	9.2 %	8.9 %
30-35	25.3 %	34.9 %	32.3 %
40-45	26.1 %	23.3 %	26.6 %
50-55	23.8 %	20.0 %	15.0 %
Over 55	13.2 %	10.0 %	14.1 %
Other/Unknown	2.4 %	2.7 %	3.1 %
Relation to Junction			
Non-intersection	74.8 %	75.9 %	74.0 %
Intersection/Intersection	20.0 %	19.3 %	21.4 %
Other/Unknown	5.2 %	4.8 %	4.6 %
Traffic Controls			
None	84.5 %	86.6 %	84.5 %
Traffic Signal (RGA)	8.9 %	8.4 %	8.9 %
Stop Sign	2.3 %	2.3 %	2.3 %
Other Signs/Signals	4.3 %	2.7 %	4.3 %

Source: FARS 1999-2003

Roadway surface conditions for the vast majority of all pedestrian crashes were "dry." Although the Hispanic fatalities were somewhat more likely (89.2) to occur during dry conditions than either Whites (83.9%) or Blacks (85.7%), this is probably an artifact of their state of residence, since 43% of the Hispanic fatalities occurred in "Sunbelt" states (AZ, CA, FL and TX). This is also shown by the relatively low incidence of Hispanic fatalities when it is snowy and/or icy.

Hispanic pedestrian fatal crashes also are less likely to occur during daylight. While 25.4% of the Hispanic pedestrians were struck during daylight, 31.9% of the non-Hispanic Whites were involved during the daylight. Figure 4 graphically shows the percentage of fatalities by time of day. In general, the curves for non-Hispanic Whites, non-Hispanic Blacks and Hispanics are very similar. The non-Hispanic Whites have slightly more crashes from 6am to 6pm, times when it is usually light. The Hispanic crashes show small peaks at 8pm and 9pm and again at 1am and 2am. These peaks may be related to the previously described increased alcohol involvement in Hispanic pedestrian crashes.

Figure 4: Pedestrian Fatalities by Time of Day
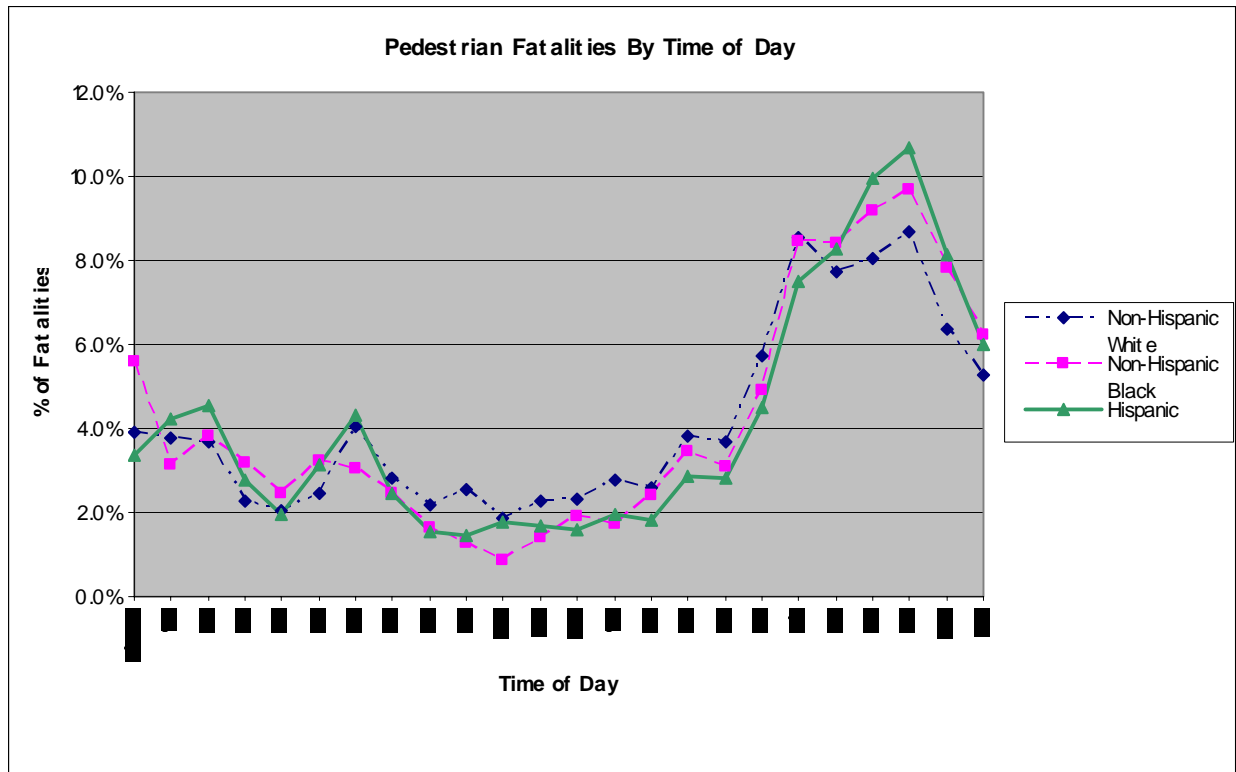
Source: FARS 1999-2004

The roadway classification of the crashes shows that Hispanic pedestrians are more likely to be involved in crashes on major urban arterials (40.9%) and minor urban arterials (17.8%) than the other ethnicities. The next variable listed, number of lanes, provides similar information. Hispanic pedestrians are less likely to be killed on two-lane roads (58.4%) than are non-Hispanic Whites (66.7%). Similarly, Hispanics are more likely to be killed on roads with 3 lanes (14.0%) , 4 lanes (19.2%) or 5 or more lanes (6.2%). This over-involvement in crashes on multi-lane arterials is also shown under the "light condition" variables which show that 40% of the Hispanic fatalities occurred under dark conditions but where street lighting was present. This over-involvement on lighted, multi-lane, major arterials is probably related to the fact that Hispanic crashes more typically involve young adult males, many of whom have been drinking.

The data on posted speed limit also mirrors the trends noted relative to roadway classification and number of lanes. The Hispanic pedestrians are less involved (15.0%) on roadways with 50 or 55 mph speed limits and somewhat more involved on roadways with 30-35 mph speed limits, the speed limit information on the location of the crash relative to an intersection reveals no meaningful differences. Ethnicity does not appear to influence whether pedestrians are involved in crashes that are intersection or intersection-related or not near an intersection. It is interesting that only about 1/5 of all the fatal pedestrian crashes are intersection or intersection-related, regardless of ethnicity.

The last data element, Traffic Controls Present, reflects similar information. Only about 9% of all pedestrian fatalities occur at a signalized intersection with a Red-Green-Amber (RGA) signal. Unfortunately, it is not known if a pedestrian signal head is present at most of these locations. There are no differences between the ethnicities in terms of traffic controls at the crash location. Pedestrian safety programs that target crashes at signalized intersections and/or pedestrian crosswalk locations are not focusing on the location of most fatal pedestrian crashes, including those involving Hispanics.

Bicyclist Fatalities (FARS)

Two kinds of FARS data will be presented in this section. The first describes characteristics of the bicyclists involved in the crashes – i.e., ethnicity, age, gender, alcohol involvement, etc. The second kind of data variables involve the crash itself, i.e., time of day, site characteristics, etc. These variables are called Accident Level Variables.

a. Bicyclist Characteristics

Table 10 shows the annual bicyclist fatalities from 1999 through 2003. The top portion shows all the Hispanics group together. The bottom portion of the table has the Hispanics broken out by country of origin. As was noted earlier, it is important to look at both the percentages and the number it represents. Some of the cells in the tables that follow have relatively small numbers and the computed percentage should be carefully considered.

Table 10 - Bicyclist Fatalities by Ethnicity

Bicyclist Fatalities By Ethnicity												
	Year										Total	
	1999		2000		2001		2002		2003			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	377	64.4%	346	63.4%	377	61.0%	240	64.2%	248	63.6%	1,588	63.2%
Non-Hispanic Black	88	15.0%	95	17.4%	118	19.1%	72	19.3%	73	18.7%	446	17.7%
Non-Hispanic Other	27	4.6%	18	3.3%	17	2.8%	9	2.4%	15	3.8%	86	3.4%
Hispanic - All	93	15.9%	87	15.9%	106	17.2%	53	14.2%	54	13.8%	393	15.6%
Total	585	100.0%	546	100.0%	618	100.0%	374	100.0%	390	100.0%	2,513	100.0%

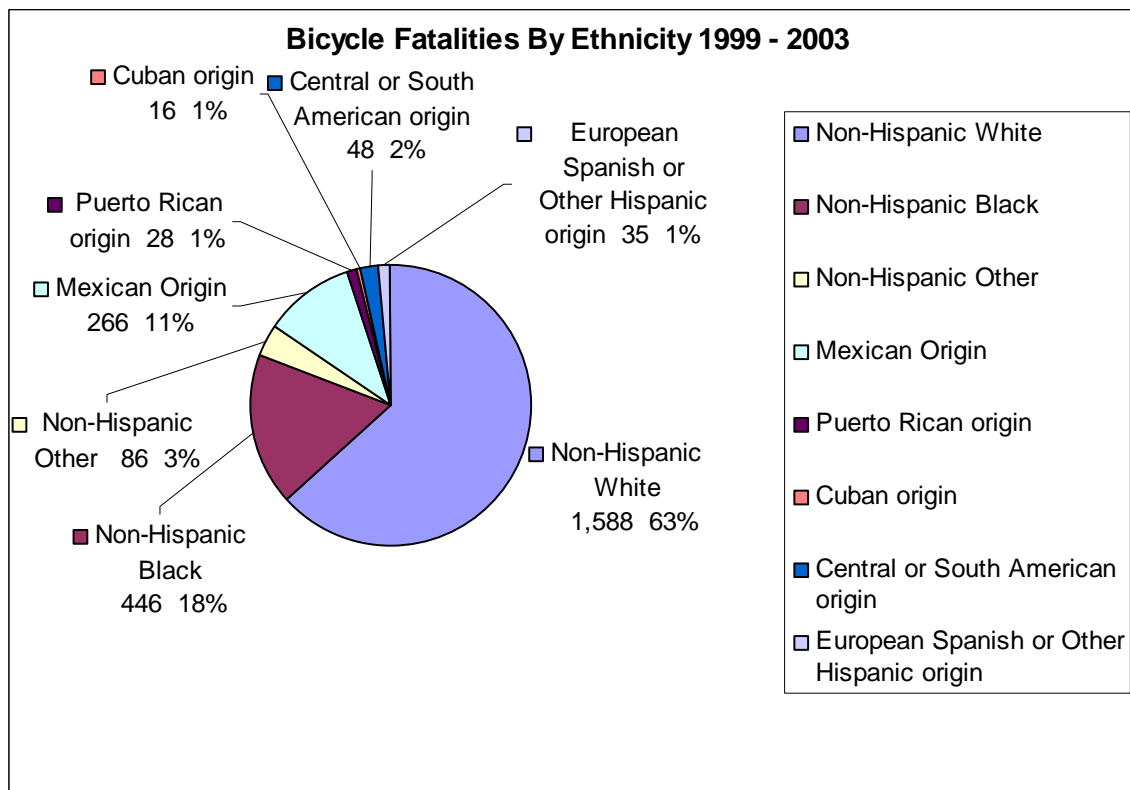| Bicyclist Fatalities By Ethnicity Sub-Group												
	Year										Total	
	1999		2000		2001		2002		2003			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	377	64.4%	346	63.4%	377	61.0%	240	64.2%	248	63.6%	1,588	63.2%
Non-Hispanic Black	88	15.0%	95	17.4%	118	19.1%	72	19.3%	73	18.7%	446	17.7%
Non-Hispanic Other	27	4.6%	18	3.3%	17	2.8%	9	2.4%	15	3.8%	86	3.4%
Mexican Origin	73	12.5%	61	11.2%	73	11.8%	29	7.8%	30	7.7%	266	10.6%
Puerto Rican origin	5	0.9%	9	1.6%	8	1.3%	4	1.1%	2	0.5%	28	1.1%
Cuban origin	2	0.3%	0	0.0%	3	0.5%	4	1.1%	7	1.8%	16	0.6%
Central or South American origin	7	1.2%	11	2.0%	13	2.1%	6	1.6%	11	2.8%	48	1.9%
European Spanish or Other Hispanic origin	6	1.0%	6	1.1%	9	1.5%	10	2.7%	4	1.0%	35	1.4%
Total	585	100.0%	546	100.0%	618	100.0%	374	100.0%	390	100.0%	2,513	100.0%

Source: Fatal Accident Reporting System: 1999-2003

Overall, bicyclist fatalities have declined since 1999. The percentage of the fatalities that were Hispanic has also gone down slightly from 15.9% of the total in 1999 to 13.8% of the total in 2003. The year 2001 shows an increase in bicycle fatalities in all ethnic groups except for non-Hispanic Other. Overall, from 1999 through 2003, Hispanics have been involved in 15.6% of the bicyclist fatalities.

In terms of country of origin, Hispanics of Mexican origin account for the greatest number of crashes. Of the 393 Hispanic bicyclists killed from 1999 to 2003, a total of 266 (67.7%) were of Mexican origin. Hispanics of Cuban origin (N=16) and those of Puerto Rican origin (N=28) are less frequently involved, although it should be remembered that they also represent a much smaller percentage of the Hispanics in the U.S.

Figure 5 shows the distribution of bicycle fatalities by ethnicity during the 1999 -2003 timeframe. Clearly shown is that Hispanics of Mexican origin make up 11% of the National bicycle fatalities. All Hispanic subgroups combine to represent 15.6% of all bicycle fatalities in the U.S. The next largest sub-group is the Hispanics of Central/South American origin; they account for 2% of the national total.

Figure 5 - Bicycle Fatalities by Ethnicity

Source: Fatal Accident Reporting System: 1999-2003

Table 11 shows the ethnicity and gender of the 2513 bicycle fatalities from the FARS database for 1999-2003. The vast majority of all bicyclist fatalities (88.8%) are male. Hispanics have an even higher percentage of males (94.1%) than do the non-Hispanic Whites (87.0%) or the non-Hispanic Blacks (91.3%). This very high involvement of males in bicyclist accidents is true regardless of the country of origin. Hispanics of

Mexican origin have the highest percentage of males (94.7%) of all the Hispanic sub-groups, not including the very small number (N=16) of Cuban bicycle fatalities.

Table 11: Bicyclist Fatalities by Ethnicity & Gender

Bicyclist Fatalities by Ethnicity & Gender						
	Male		Female		Both Genders	
Ethnicity	N	%	N	%	N	%
Non-Hispanic White	1,381	87.0%	207	13.0%	1,588	100.0%
Non-Hispanic Black	407	91.3%	39	8.7%	446	100.0%
Non-Hispanic Other	74	86.0%	12	14.0%	86	100.0%
Hispanic - All	370	94.1%	23	5.9%	393	100.0%
Total	2,232	88.8%	281	11.2%	2,513	100.0%

Bicyclist Fatalities by Ethnicity Sub-Group & Gender						
	Male		Female		Both Genders	
Ethnicity	N	%	N	%	N	%
Non-Hispanic White	1,381	87.0%	207	13.0%	1,588	100.0%
Non-Hispanic Black	407	91.3%	39	8.7%	446	100.0%
Non-Hispanic Other	74	86.0%	12	14.0%	86	100.0%
Mexican Origin	252	94.7%	14	5.3%	266	100.0%
Puerto Rican origin	26	92.9%	2	7.1%	28	100.0%
Cuban origin	16	100.0%	0	0.0%	16	100.0%
Central or South American origin	45	93.8%	3	6.3%	48	100.0%
European Spanish or Other Hispanic origin	31	88.6%	4	11.4%	35	100.0%
Total	2,232	88.8%	281	11.2%	2,513	100.0%

Source: Fatal Accident Reporting System: 1999-2003

Table 12 (next page) shows male bicyclist fatalities by Ethnicity and Age for 1999 to 2003 combined. A total of 2,232 fatalities are represented. Overall, the Hispanics show a different age distribution than the other ethnicities. They are less involved as children 6-15 year of age. While 21.9% of the non-Hispanic Whites and 25.3% of the non-Hispanic Blacks were 6-15 years of age, only 11.6% of the Hispanics were in that age group. Conversely, they are far more involved as young adults. A total of 18.1% of the Hispanic male fatalities were 21-29 years of age while only 7.3% of the non-Hispanic Whites and 7.1% of the non-Hispanic Blacks were 21-29.

The country of origin data shown indicates that most (47 out of 67) of the male Hispanics aged 21-29 that were killed were of Mexican origin. Overall, Hispanics of Mexican origin account for 252 out of 370 (68.1%) of the male bicycle Hispanic fatalities.

Since there were only 23 female Hispanic bicycle fatalities in 5 years of FARS data, a separate table showing female bicycle fatalities by age and ethnicity is not being presented.

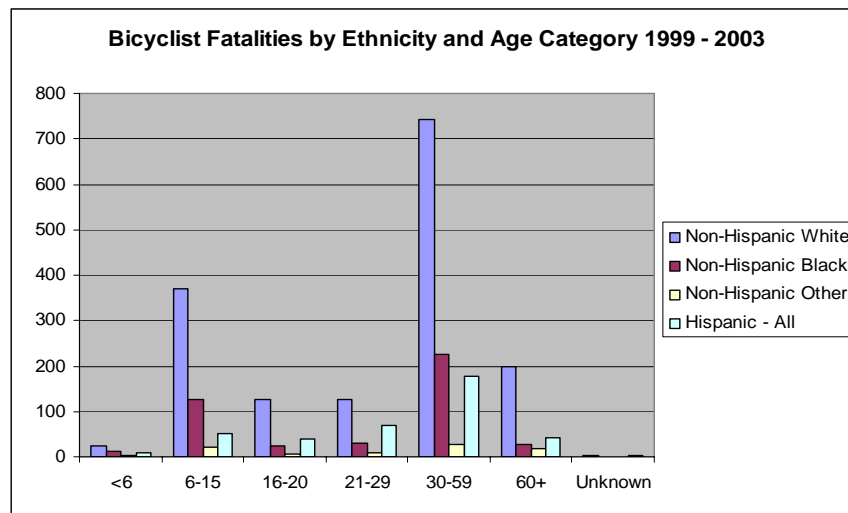**Table 12: Male Bicyclist Fatalities by Ethnicity & Age**

Male Bicyclist Fatalities by Ethnicity & Age																
	Age Category														Total	
	<6		6-15		16-20		21-29		30-59		60+		Unknown			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	19	1.4%	303	21.9%	107	7.7%	101	7.3%	668	48.4%	181	13.1%	2	0.1%	1,381	100.0%
Non-Hispanic Black	9	2.2%	103	25.3%	24	5.9%	29	7.1%	215	52.8%	26	6.4%	1	0.2%	407	100.0%
Non-Hispanic Other	2	2.7%	17	23.0%	6	8.1%	8	10.8%	22	29.7%	18	24.3%	1	1.4%	74	100.0%
Hispanic - All	7	1.9%	43	11.6%	37	10.0%	67	18.1%	172	46.5%	42	11.4%	2	0.5%	370	100.0%
Total	37	1.7%	466	20.9%	174	7.8%	205	9.2%	1,077	48.3%	267	12.0%	6	0.3%	2,232	100.0%

Male Bicyclist Fatalities by Ethnicity Sub-Group & Age																
	Age Category														Total	
	<6		6-15		16-20		21-29		30-59		60+		Unknown			
Ethnicity	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Non-Hispanic White	19	1.4%	303	21.9%	107	7.7%	101	7.3%	668	48.4%	181	13.1%	2	0.1%	1,381	100.0%
Non-Hispanic Black	9	2.2%	103	25.3%	24	5.9%	29	7.1%	215	52.8%	26	6.4%	1	0.2%	407	100.0%
Non-Hispanic Other	2	2.7%	17	23.0%	6	8.1%	8	10.8%	22	29.7%	18	24.3%	1	1.4%	74	100.0%
Mexican Origin	4	1.6%	33	13.1%	23	9.1%	47	18.7%	114	45.2%	30	11.9%	1	0.4%	252	100.0%
Puerto Rican origin	0	0.0%	5	19.2%	1	3.8%	2	7.7%	13	50.0%	5	19.2%	0	0.0%	26	100.0%
Cuban origin	0	0.0%	0	0.0%	1	6.3%	2	12.5%	9	56.3%	4	25.0%	0	0.0%	16	100.0%
Central or South American origin	0	0.0%	3	6.7%	9	20.0%	8	17.8%	23	51.1%	1	2.2%	1	2.2%	45	100.0%
European Spanish o	3	9.7%	2	6.5%	3	9.7%	8	25.8%	13	41.9%	2	6.5%	0	0.0%	31	100.0%
Total	37	1.7%	466	20.9%	174	7.8%	205	9.2%	1,077	48.3%	267	12.0%	6	0.3%	2,232	100.0%

Source: Fatal Accident Reporting System: 1999-2003

Figure 6 graphically depicts the number of bicycle fatalities by age group and ethnicity. The increased involvement of Hispanic bicyclist in the 21-29 age group is evident. The figure also clearly shows that, in terms of number of fatalities, the 30-59 age group has the largest number of fatalities for each of the ethnicities.

Figure 6 - Bicyclist Fatalities by Ethnicity & Age

Source: Fatal Accident Reporting System: 1999-2003

Table 13 shows the number of alcohol-related bicycle fatalities by ethnicity and gender. As shown, 13.2% (49 out of 370) of the Hispanic male fatalities involved alcohol. This is higher than the 10.0% of non-Hispanic Whites and 9.8% of non-Hispanic Blacks that had alcohol involvement. Alcohol involvement among all female bicyclists is very low. When the various Hispanic sub-groups are examined it is apparent that male Hispanics of Mexican origin (15.5%) and European Spanish or Other origin (19.4%) have the highest level of alcohol involvement. Some of the percentages shown in this table are based on very small numbers and should be very carefully interpreted. It is nevertheless quite clear that Hispanic bicycle safety programs should address the issue of drinking and riding by Hispanics of Mexican origin.

Table 13: Alcohol-Related Bicyclist Fatalities by Ethnicity & Gender

Ethnicity	Males			Females			Both Genders		
	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals
	N	%	N	N	%	N	N	%	N
Non-Hispanic White	138	10.0%	1,381	5	2.4%	207	143	9.0%	1,588
Non-Hispanic Black	40	9.8%	407	2	5.1%	39	42	9.4%	446
Non-Hispanic Other	8	10.8%	74	0	0.0%	12	8	9.3%	86
Hispanic - All	49	13.2%	370	1	4.3%	23	50	12.7%	393

Alcohol Related Bicyclist Fatalities by Ethnicity Sub-Group & Gender									
Ethnicity	Males			Females			Both Genders		
	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals	Alcohol Involvement		Total Fatals
	N	%	N	N	%	N	N	%	N
Non-Hispanic White	138	10.0%	1,381	5	2.4%	207	143	9.0%	1,588
Non-Hispanic Black	40	9.8%	407	2	5.1%	39	42	9.4%	446
Non-Hispanic Other	8	10.8%	74	0	0.0%	12	8	9.3%	86
Mexican Origin	39	15.5%	252	0	0.0%	14	39	14.7%	266
Puerto Rican origin	2	7.7%	26	0	0.0%	2	2	7.1%	28
Cuban origin	0	0.0%	16	0	0.0%	0	0	0.0%	16
Central or South American origin	2	4.4%	45	0	0.0%	3	2	4.2%	48
European Spanish or Other Hispanic origin	6	19.4%	31	1	25.0%	4	7	20.0%	35

Source: Fatal Accident Reporting System: 1999-2003

b. Bicyclist Crash Characteristics

The FARS database contains a number of variables that describe characteristics of the crash itself, i.e., weather, roadway characteristics, etc. This section includes cross tabulations of these variables for the major ethnicity groups – Non-Hispanic Whites, Non-Hispanic Blacks, and Hispanics. Table 14 (next page) contains distributions of the following variables for each of the three major ethnic groups:

> Roadway/Area Type
> Surface condition
> Light Condition
> Roadway Classification
> Number of Lanes
> Relation to Junction
> Posted Speed Limit
> Traffic Controls Present

These variables were selected because they either provide insight into the nature of Hispanic bicyclist crashes or because they highlight potential differences between the bicyclist crash experience of Whites, Blacks and/or Hispanics. A number of other "accident level" variables in the FARS database were also examined but were found to provide no additional useful information or insights. These variables were:

> Route Signing
> Manner of Collision
> Relation to Roadway
> Trafficway Flow
> Roadway Alignment
> Roadway Profile
> Roadway Surface Type
> Construction/Maintenance Zone
> Traffic Control Functioning
> Atmospheric Conditions
> Hit and Run
> School Bus Related
> Emergency Medical Services Information

As shown in Table 14, Hispanic bicyclists are much more involved in fatal crashes in urban areas (78.6%) than are non-Hispanic Whites (60.3%). Non-Hispanic Blacks are less involved in urban crashes (68.8%) than Hispanics, but more so than non-Hispanic Whites.

Roadway surface conditions were dry in 9 out of 10 of the fatal bicyclist crashes, regardless of the bicyclist's ethnicity.

**Table 14: Selected Accident Level Variables for Bicyclist Fatalities by Ethnicity**

Selected Accident Level Variables for Bicyclist Fatalities by Ethnicity			
Variable	**Non-Hispanic White** N=1588	**Non-Hispanic Black** N=446	**Hispanic** N=393
Roadway/Area Type			
Urban	60.3 %	68.8 %	78.6 %
Rural	39.7 %	31.2 %	21.4 %
Surface Condition			
Dry	90.9 %	89.9 %	91.3 %
Wet	8.4 %	9.4 %	8.7 %
Snow or Ice	0.4 %	0.0 %	0.0 %
Other/Unknown	0.3 %	0.7 %	0.0 %
Light Condition	%		
Daylight	58.2 %	43.5 %	45.3 %
Dark - No Lighting	19.6 %	25.1 %	17.8 %
Dark - Lighting	17.3 %	27.6 %	30.0 %
Other/Unknown	4.9 %	3.8 %	6.9 %
Roadway Classification			
Arterials - Rural	13.1 %	11.0 %	5.9 %
Collectors - Rural	14.4 %	10.3 %	5.9 %
Local Road - Rural	11.4 %	8.5 %	8.7 %
Major Arterials - Urban	26.2 %	22.4 %	32.1 %
Minor Arterials - Urban	14.9 %	15.0 %	22.6 %
Collectors - Urban	3.9 %	6.3 %	7.1 %
Local Streets - Urban	13.8 %	22.9 %	16.3 %
Other/Unknown	2.3 %	3.6 %	1.5 %
Number of Lanes			
Two or less	74.0 %	67.3 %	66.2 %
Three	7.2 %	8.7 %	12.5 %
Four	13.4 %	19.7 %	17.0 %
Five or more	3.0 %	2.5 %	3.1 %
Unknown	2.4 %	1.8 %	1.3 %
Posted Speed Limit		%	
25 or less	8.1 %	13.2 %	10.4 %
30-35	27.5 %	35.2 %	29.5 %
40-45	29.9 %	27.4 %	36.6 %
50-55	27.6 %	19.5 %	17.0 %
Over 55	4.7 %	3.6 %	2.3 %
Other/Unknown	2.3 %	1.1 %	4.1 %
Relation to Junction			
Non-intersection	66.7 %	62.1 %	57.8 %
Intersection/Intersection-related	27.8 %	32.5 %	37.4 %
Other/Unknown	5.5 %	5.4 %	4.8 %
Traffic Controls Present			
None	76.5 %	73.5 %	71.0 %
Traffic Signal (RGA)	10.5 %	9.9 %	12.7 %
Stop Sign	9.7 %	13.0 %	13.7 %
Other Signs/Signals	3.3 %	3.6 %	2.6 %

Source: FARS 1999-2003

The light conditions at the crash scene do show some interesting differences. Non-Hispanic Whites are more involved in daytime crashes (58.2%) than are Hispanics (45.3%) Hispanics are more involved in nighttime crashes where there is street lighting (30.0%) than are either non-Hispanic Whites (17.3%) or non-Hispanic Blacks (27.6%).

Figure 7 shows the distribution of bicyclist fatalities by time of day for non-Hispanic Whites, non-Hispanic Blacks and Hispanics. Except for a brief period in the early morning (5, am, 6am, 7am and 8am), where there are more Hispanics involved, the curves for all ethnicities are relatively close together. The non-Hispanic Blacks have a similar period of over-involvement in the evening at 7pm and 8pm.

Figure 7: Bicyclist Fatalities by Time of Day
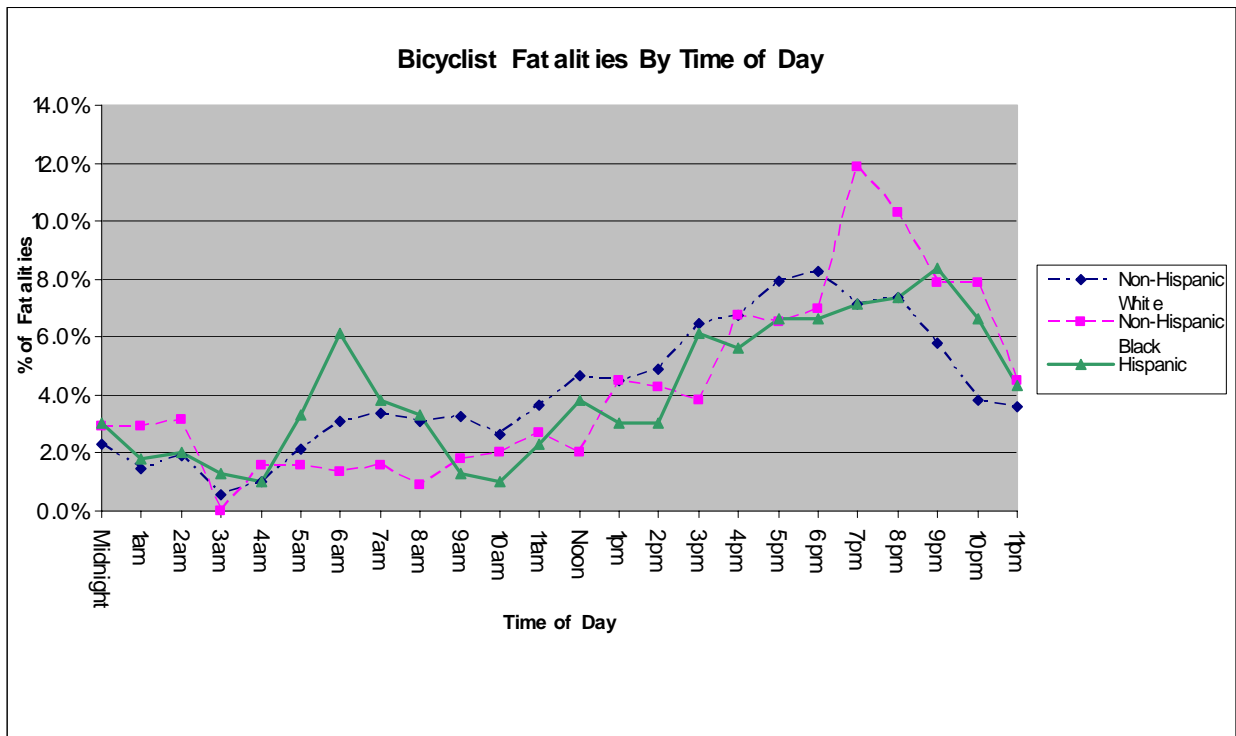
Source: FARS 1999-2004

The roadway classification data shows that most of the Hispanic crashes occur on either major urban arterials (32.1%) or minor urban arterials (22.6%). As previously discussed, the Hispanic bicyclists tend to be older than the non-Hispanic White bicyclists. Apparently, they also tend to ride on more major roadways. The data on number of traffic lanes supports this trend. Two thirds (66.2%) of the Hispanic crashes occur on roadways with 2 or fewer lanes versus 74.0% of the non-Hispanic White crashes. This leaves one-third of the Hispanic crashes on roadways with 3 or more lanes. Seventeen percent occur on 4-lane roadways.

Apparently, the urban/suburban minor/major arterials where these crashes are occurring are not the stereotypical urban/suburban arterials with 3 or more lanes. The data on posted speed limit shows that most of the Hispanic bicyclist crashes occur in areas posted at 30-35 mph (29.5%) or 40-45 mph (36.6%). Although the crashes are typically occurring on 2-lane roadways, these two-lane roadways have relatively high posted speed limits.

Hispanic bicyclists are more likely to be killed at or near an intersection (37.4%) than are non-Hispanic Whites (27.8%). This is probably related to the previous described over-involvement on multi-lane arterials. This supports the belief that intersections on multi-lane roadways are especially hazardous for bicyclists, and is a potential topic for safety educational programs targeting Hispanic bicyclists.

The data on traffic controls at the crash scene supports the over-involvement of Hispanic bicyclists at intersections. There was a traffic sign at 29.0% of all Hispanic fatalities, versus 23.5% for non-Hispanic Whites and 26.5% for non-Hispanic Blacks.

C. Center for Disease Control (CDC) Data

The Center for Disease Control (CDC) maintains a database that includes fatal pedestrian and bicyclist crashes. The National Center for Health Statistics' Vital Statistics System provided information on the number of deaths and the Bureau of Census provided population data. This information was combined to determine the Average Crash Rate or the number of deaths per 100,000 population. The following three ethnicity categories were examined: Hispanic, Non-Hispanic White, and Black. To determine if country of origin may play a role in crash involvement, the data from seven selected states is presented in addition to the national statistics. As explained earlier, these seven states were selected because of their high proportion of Hispanics from Mexico, Central/South America, Puerto Rico and Cuba.

Table 15 presents the Pedestrian and Bicyclist Deaths and Death Rates (per 100,000) for the Hispanic, White and Black populations. The national death rate for Hispanics in pedestrian crashes is 2.88 per 100,000 population. For Whites, it is 1.78 per 100,000; 62% less. For Blacks it is 3.01 per 100,000 – very slightly (4%) more than the Hispanics rate. Clearly, in the National perspective, Hispanics and Blacks are over-represented in pedestrian crashes.

Table 15 - Pedestrian & Bicyclist Deaths & Death Rates by Ethnicity

Pedestrian and PedalCyclist Deaths and Death Rates (per 100,000) for the Hispanic, White and Black U.S. Population											
	Pedestrians						Bicyclists					
Location	Hispanic: All Races		Non-Hispanic: White		Non-Hispanic: Black		Hispanic: All Races		Non-Hispanic: White		Non-Hispanic: Black	
	Number Deaths	Death Rate *	Number Deaths	Death Rate *	Number Deaths	Death Rate *	Number Deaths	Death Rate *	Number Deaths	Death Rate *	Number Deaths	Death Rate *
All 50 States	1,071	2.88	3,527	1.78	1,073	3.01	121	0.32	519	0.26	120	0.34
Selected States:												
California	333	2.89	335	2.05	62	2.64	41	0.36	57	0.35	7	* 0.29
District of Columbia	0	-	1	* 0.62	8	* 2.31	0	-	0	-	2	* 0.57
Florida	97	3.38	327	3.06	86	3.49	24	0.84	75	0.70	20	0.81
Maryland	7	* 2.87	58	1.72	48	3.16	0	-	10	* 0.29	4	* 0.26
NewJersey	23	1.96	100	1.78	37	3.20	5	* 0.42	15	* 0.26	6	* 0.51
New York	60	2.01	264	2.22	75	2.52	7	* 0.23	28	0.24	5	* 0.16
Virginia	11	* 3.09	75	1.48	28	1.95	1	* 0.28	14	* 0.27	5	* 0.34
* Rates based on 20 or fewer deaths may be unstable; use with caution.												
Source: Center for Disease Control - 2001 data												

When the death rates in some of the selected states are examined, the differences are far less dramatic. Although the death rates for Hispanics in California are 40% higher than the rates for Whites, they are only 10% higher in Florida and New Jersey. One could hypothesize that the higher rate in California is because the more recent immigrants from Mexico in that state have more problems than in the more established Hispanic populations in Florida and New Jersey. The relatively high rates in both Maryland and Virginia, with their populations of recent immigrants from Central and South America,

support this hypothesis. The rates, however, are based on only seven fatalities in Maryland and eleven in Virginia and may be unstable. The pedestrian death rate for Blacks is about as high or higher than that of Hispanics.

The right-hand side of Table 15 shows the bicyclist deaths and death rates for the same locations. The death rate for Hispanic cyclists is about 25% higher. As was the case with the pedestrian data, the death rate for Blacks is slightly higher than that of Hispanics. The bicyclist rate data for the individual states should be used with caution. Most of the frequencies are less than 20 and the rates may be unstable. However, in Florida, Hispanics are about 20% over-involved while there is no real difference in California. Overall, the bicyclists' death rate data is very similar to that of the pedestrians. Hispanics have somewhat higher death rates than non-Hispanic Whites while Blacks have rates comparable to those of Hispanics.

D. Miami/Dade County Data.

Data files containing pedestrian crash data from 1996-2000 were obtained and analyzed. The data files identified the race/ethnicity of the pedestrians as White, Black, Hispanic or Other. Data on a total of 7,988 pedestrian crashes was analyzed. In order to calculate crash involvement rates, population figures for Miami/Dade County were obtained from the U.S. Census. This information is presented in Table 16.

Table 16 - Pedestrian Crash Rate by Ethnicity in Miami/Dade County, FL

Pedestrian Crash Rate by Ethnicity in Miami/Dade County, Florida						
Population Group	Total Population	Percent	Pedestrian Crashes 1996-2000	Average Yearly Crash Rate per 100,000	Pedestrian Fatalities 1996-2000	Average Yearly Death Rate per 100,000
Hispanic or Latino	1,291,737	57.3	1,987	30.8	126	2.0
Non-Hispanic, White	465,772	20.7	3,234	138.9	147	6.3
Non-Hispanic, Black	427,140	19.0	2,498	117.0	99	4.6
Other & Unknown	68,713	3.0	269	78.3	0	-
Total	2,253,362	100.0	7,988	70.9	372	3.3

Source: Center for Disease Control - 1996-2000 data

Miami/Dade County has a total population of 2.25 million with 7,988 pedestrian crashes over the 5-year period from 1996-2000. The Average Annual Crash Rate per 100,000 is 70.9. The crash rates by race/ethnicity are very interesting. According to the Census data, over half of the population is considered Hispanic. Yet, they are involved in only 1,987 cashes – only 25% of the total crashes. This produces an Average Annual Crash Rate of only 30.8 per 100,000 – about one-quarter that of non-Hispanic Whites and non-Hispanic Blacks. The average yearly death rate per 100,000 for the Hispanics is only 1.95, less than one-third of the White death rate and less than one-half of the Black death

rate. Overall, the death rate in Miami/Dade County is 3.30 per 100,000 – very close to the death rates previously reported in the CDC data.

It could be hypothesized that this low death rate for Hispanics is due to the large Cuban-American population in Miami - individuals who have been in this county for many years. Unfortunately, we do not know if the criteria used by the police department to classify a pedestrian as Hispanic are the same as the criteria used by the U.S. Census. Unless very similar definitions are used to define both the population of Hispanics and the Hispanic crashes, these rate computations may be suspect.

Even if the rate data is suspect, the Miami/Dade County crash data is still a very useful resource. It provides the opportunity to compare the crash characteristics of pedestrian crashes involving 1,987 Hispanics, 3,234 Whites and 2,498 Blacks. Cross tabs were run on all of the crash variables for the three race/ethnicity categories – Hispanic, White, Black. The following data elements were examined:

Year of Crash	Impact Speed
Day of Week	Posted Speed Limit
Time of Day	Vehicle Movement
Lighting Condition	Driver Alcohol/Drug Use
Weather	Driver Race
Traffic Control Present	Driver Gender
Number of Lanes	Driver Age
Divided/Undivided Roadway	Contributing Causes – Driver
Roadway System Identifier	Number of Pedestrians
Crash Location	Pedestrian Alcohol/Drug Use
Vehicle Type	Pedestrian Gender

Overall there were no major differences in the crash characteristics of Hispanics, Whites and Blacks. Only the following variables were notable:

- Hispanics slightly more involved at locations with no traffic control present (67.8% of Hispanic pedestrian crashes vs. 63.9% of White pedestrian crashes).

- Hispanics slightly less involved in crashes at or influenced by an intersection (25.9% of Hispanic pedestrian crashes vs. 30.1% of White pedestrian crashes).

- Hispanics slight less involved in crashes on state roads (11.4% of Hispanic crashes vs. 20.4% of White pedestrian crashes) and more involved in crashes on county roads (26.1% of Hispanic pedestrian crashes vs. 17.3% of White pedestrian crashes).

Although these differences are small, the consistency between all three of these data elements does suggest that Hispanics may be crossing more at mid-block locations (jaywalking) on local streets. Educational messages could target this unsafe behavior.

IV. Focus Group Discussions

This section of the report describes efforts to identify local Hispanic community-based groups with an interest in pedestrian/bicyclist safety and summarizes results of the focus group discussions that were conducted. A more detailed analysis of the focus group research can be found at http://safety.fhwa.dot.gov/ped_bike/docs/fhwanhtsa.htm .

A. Partnership and Coalition Building: Main Findings.

The Media Network (TMN) contacted over 100 Hispanic community-based organizations in New York, Miami, Los Angeles, and Washington, D.C. to learn more about the work these organizations are doing related to pedestrian and bicyclist safety, and to assess their overall interest in the topic. The goal was that these organizations would work in partnership with us to provide data regarding crash statistics, and to provide us with information on what actions, if any, are going on at the local level about this topic. The response from these organizations was disappointing, with many organizations not returning our calls. The organizations we were able to talk to generally did not have much information on this topic. A few groups provided reports, essays, or other documents with relevant information, or even personal stories about accidents they had witnessed or heard about. However, most organizations did not have relevant information. No significant local efforts related to Hispanic pedestrian and/or bicyclist safety were found.

B. Focus Group: Activities

Focus groups are used to develop insight and direction. The value of focus groups is in their ability to provide observers with unfiltered comments from a segment of the target population, and for decision-makers to gain insight into the beliefs, attitudes, and perceptions of the target audience. However, because of the limited number of respondents and the non-random nature of focus group recruiting, the findings from the focus groups cannot be quantitatively projected to a universe of similar respondents.

The following topics will be discussed below:

> 1. Focus Group Methodology
> 2. Recruitment Process for Focus Groups
> 3. Profile of Participants
> 4. Detailed Findings from Pedestrian Focus Groups
> 5. Detailed Findings from Bicyclist Focus Groups
> 6. Focus Group Main Findings

1. Focus Group Methodology

The focus groups were held in March, April, and May 2004 in Silver Spring, MD (just outside Washington, DC), New York, Miami, and Los Angeles. Each group was led by a professional bilingual focus group moderator. The groups lasted about two hours and

were conducted in Spanish. In each city, one group was conducted with bicyclists and one group was conducted with pedestrians. Each participant signed an agreement to acknowledge that the session was being recorded (audio only), and informing them that their personal information would be kept confidential. Participants were provided with a light dinner, as well as a cash stipend for their participation.

At the beginning of the discussion, participants were encouraged to share their ideas and were told that there were no wrong answers to the questions being asked. Participants were advised of "ground rules" for the discussion, which included the role of the moderator and what constitutes appropriate participant behavior. They were then reminded that they were being recorded.

To begin the discussion, participants introduced themselves to one another and to the moderator. They were then led through the research questions in the moderator's guide, which focused on issues such as general attitudes about bicycle and pedestrian safety, knowledge of U.S. traffic laws, sources of information about these laws and safety issues, and overall interest in this topic.

2. Recruitment Process for Focus Groups

The Media Network designed recruiting screeners to make sure that participants in the focus groups fit the profile of respondents FHWA/NHTSA was seeking. We had two different group types in each city: Hispanic pedestrians and Hispanic bicyclists. Our goal was to have approximately eight to nine participants in each group. The Media Network worked with partners from its own proprietary database, community centers, and other local organizations (including local biking associations) to obtain names of people who fit the criteria to participate in these focus groups (Spanish-speaking Hispanic males and females, over the age of 18, who were regular walkers or bicycle riders). Our goal was to create diverse groups of respondents in each city. Potential participants were contacted by telephone and were screened to verify their eligibility. See the Appendix for the screeners used in this project.

Eligible participants were invited to participate in the groups, and were assured of the personal confidentiality and research-oriented purpose of the groups. These participants were not informed of the sponsor of this project. Confirmation letters with the time and location of the group were sent to all participants, as well as directions to the facilities where the groups were being held. Participants were called the night before the sessions to remind and encourage them to attend.

3. Profile of Participants

All persons selected to be in a focus group described themselves as Latino or Hispanic and indicated that they spoke Spanish at least "some of the time" at home. The focus group discussions were held in Spanish. To participate in the pedestrian focus group they had to indicate that they walked a half mile or more at least twice a week. To be in the bicycle focus group they had to indicate that they rode a bicycle at least once a week.

A total of 62 persons, 28 males and 34 females, participated. Thirty-five persons participated in the four pedestrian focus groups and 27 persons participated in the 4 bicycle focus groups.

Eleven participants were from Puerto Rico; 7 from Cuba; 6 from Mexico; 5 from Columbia; 4 each from Argentina, Guatemala and Peru; and 3 each from Ecuador, El Salvador and Nicaragua. The remaining participants were from other South and Central American countries.

The median age category was 40-49 years old, with 30-39 years being the modal age category.

Most (18) of the respondents reported having a high school degree or a GED. Fifteen had a college degree, 12 had some college, 9 had less than a high school degree and 8 reported having a graduate or professional degree.

Reported annual incomes were as follows: Less than $15,000 – 15; $15-$25,000 – 12; $25-$40,000 – 17; $40-$60,000 – 12; and over $60,000 – 6.

4. Detailed Findings for Pedestrian Focus Groups

The findings reported here are from the four groups that focused on issues related to Hispanic pedestrian safety. The findings are topically organized.

a. Where and how often Hispanic pedestrians walk

Participants reported a variety of walking behaviors. Several do not own a car, and thus rely heavily on walking to get them places. Others live within walking distance of places they visit regularly, such as church or the grocery store. Still others walk to public transportation stops or simply for pleasure or exercise. They reported walking anywhere from several minutes a day to several hours a day. Most walk during the daytime, but a few reported that they walk at night. There is some sense among these pedestrians, discussed later in this report, that Hispanic pedestrians may encounter particular hazards in the places they walk that other ethnic groups do not (e.g. in more dangerous areas). California pedestrians were asked whether they personally walked along railroad tracks, and all group members reported that they do not. They said that in the U.S., railways are better protected than in Hispanic countries, with fences and signs that prevent people from walking along the tracks.

b. General awareness of traffic signs and regulations

Focus group participants mentioned that they were familiar with several aspects of the U.S. traffic system, including various traffic signs, signals, and laws. However, their knowledge of these laws and systems was somewhat vague, and most participants could not describe in detail the safety systems concerning traffic in the U.S. For example, one group member described pedestrian walkways as "those white lines," while another indicated awareness of the crosswalk buttons, but skepticism regarding whether they really worked. Likewise, some pedestrians did not have specific ideas about what constitutes appropriate pedestrian behavior. For example, many signs are only in English, which creates confusion for new immigrants in particular. Additionally, in the U.S. system most signs are for drivers, so pedestrians report that they are not always sure what they are supposed to do (e.g. many participants reported initial confusion regarding what the blinking hand meant at a crosswalk).

c. Sources of information about traffic signs and regulations

Participants in these focus groups reported that they have few formal sources of information available to them about changing traffic laws, and they reported that new immigrants have no consolidated source of general traffic information. For example, Miami participants said that they have no source of information when laws change, and Los Angeles participants said it would take a very prominent public education campaign to alert them to changes in laws. Hispanics' original knowledge about these laws was acquired mostly through day-to-day experience and an informal network of friends and family members, although a few reported some formal education (e.g. driver's education) regarding these issues, and still others said most of what they know they learned while taking the test to get a U.S. driver's license. Many participants spontaneously mentioned that for many Hispanics who are new to the U.S., traffic laws are likely to be confusing and unknown. Hispanics appear to self-identify as relatively uninformed about these laws, although several participants said Hispanics know no more or less about these laws than other ethnic groups.

d. Pedestrians' perceptions of danger

The participants spontaneously reported that some of the places they walk are dangerous for pedestrians. For example, they mentioned intersections where cars never stop or where cars routinely stop in the middle of crosswalks, places where there are few traffic signals or where cars ignore signals, places where there are no sidewalks, and places where the time for pedestrians to cross the street is insufficient. Pedestrians also report a lack of respect in general from motorists, and cite bicyclists as a cause for concern. Many report having been in accidents with bicyclists. While they see walking as something of a hazard, often there is no alternative.

e. Safety measures and safety precautions

These pedestrians reported a variety of precautions that they take to make themselves safer. Most reported that they do not wear fluorescent clothing or reflectors to make themselves more visible, although a few do use these devices or substitutes of their own devising. [An exception was in Los Angeles, where most group members said they do wear lighter colored clothing to make themselves more visible.] A few also said that they simply avoid walking at night, or in bad weather. Pedestrians who did not currently use reflective clothing are willing to consider this behavior. Other safety measures employed by pedestrians include making sure there is an appropriate distance between themselves and cars before crossing the street, being aware of weather and general driving conditions, or trying to make visual contact with drivers to ensure drivers were aware of their presence.

f. Risk-seeking behaviors among pedestrians

These participants were most comfortable discussing behaviors that they see other pedestrians engaged in that might be unsafe, as opposed to providing specific examples of what they do which is risky. There is a general awareness that pedestrians can cause accidents doing things such as crossing in the middle of a street, or not waiting for the appropriate time to cross. Participants did not think that Hispanics were more likely to do these things than other ethnic groups. In terms of personal risky behaviors, many pedestrians report that they have jaywalked. While they know this is dangerous, they do this because they are in a hurry. Finally, some pedestrians said that they have seen other people walk after drinking. New York participants said this was common, and at least one person admitted having done this. In Miami, participants said they had only heard of such behavior and never engaged in it themselves. In Los Angeles, one person said he used to do this, but no longer does, and another reported that a man in his building does this all the time.

g. Personal knowledge of accidents

About a third of these participants had knowledge of someone who had been involved in an accident while a pedestrian. These included personal incidents, incidents involving friends and family members, and incidents they had observed. Some of the accidents were serious (one participant knew of someone who had been killed and another where a man's leg was broken), but they also reported minor incidents. The crashes involved pedestrians and cars and pedestrians and bicycles. Some of these accidents were reported to the police, while others were not. There is some reluctance to report such accidents because of fears of the police and concerns about immigration status. The causes of these accidents include parents not monitoring their children's behaviors and drivers failing to follow traffic laws. Additionally, one participant reported almost getting in an accident because he was distracted and thinking about other things.

h. Groups seen as most likely to be in an accident

Focus group participants mentioned three main groups of people likely to be involved in accidents: young children, because they do what they want and tend not to pay attention; older people, because they move slower; and, recent immigrants, because they don't know U.S. traffic rules as well and tend to work in more dangerous areas. While there is a great deal of agreement that children and seniors are more at risk, participants were more divided as to whether recent immigrants really are at increased risk. Some participants argued that recent immigrants are very alert because they are in an unfamiliar situation, while others said these immigrants simply cannot compensate for the fact that they do not know U.S. laws as well as native-born Americans or people who have been in the U.S. longer.

i. General Hispanic cultural differences

Focus group participants reported several general cultural differences that pertain to Hispanic pedestrian safety. They say that many Hispanics come from rural areas, and that adapting to city life in the U.S. takes time. Likewise, many Hispanics who come to this country do not know English well, or do not understand U.S. traffic patterns (see next section for more information on this topic). Hispanics also feel they are more likely to walk because they are poorer. Additionally, they report that many Hispanics may be afraid to report accidents to the police, because they do not know English or the U.S. traffic system well, and because some immigrants are in this country illegally. There is also a general sense that Hispanics may take more risks than other ethnic groups, due in part to an attitude of fatalism (i.e. "if it's meant to happen, it will happen"), which may mean that this population engages in more risk-seeking behaviors. One participant also said that Hispanic culture makes Latinos more likely to be rowdy while drinking alcohol, which could lead to more accidents. At the same time, some participants said that Hispanics are more alert here than in their own countries, because they are more aware of these issues.

j. Differences in traffic between Latino countries and the U.S.

These pedestrians had very energetic discussions about the differences between traffic patterns and traffic signs in the United States vs. in Hispanic countries. A primary difference is that there is more traffic in general in the United States. In addition, one of the most consistently reported differences is that traffic rules are enforced much more stringently in the United States, and, in general, traffic is more regulated in this country. Several participants also mentioned that the U.S. system is less corrupt. For the most part, traffic signs are the same in Latino countries as in the U.S. However, participants said that there are more traffic signs in the U.S., and that sometimes these signs are located in different places than they are in their home countries, or have text written in English that they do not understand. Participants specifically mentioned problems with knowing what to do at a crosswalk, with the yield sign, and with pedestrian crossings marked "walk" or "don't walk" (as opposed to using symbols). Finally, some

participants said that Hispanics are worse drivers than other Americans, and that, subsequently, Hispanic neighborhoods are more dangerous places to be a pedestrian. Hispanic neighborhoods are also said to be more crowded, with more kids in the streets, and "less respect" for traffic laws than in non-Hispanic neighborhoods.

k. Country of origin differences

Participants agreed that country of origin might also matter, although they found it difficult to come up with specific examples of differences. Essentially, they reported that each Hispanic culture is unique, and, because of this, different Hispanics bring varying expectations to being a pedestrian in the United States. Additionally, each person has a different background and education, and these factors are also related to knowledge and behaviors. However, we found in the groups a great deal of consistency in the answers people provided, indicating that country of origin differences are likely not very significant contributors to this issue, and are likely overshadowed by general cultural and language differences between Hispanics and non-Hispanics.

l. Safety solutions: Fines and tickets

In thinking about the problem of Hispanic pedestrian safety, one immediate solution offered by group members was that traffic laws needed to be more strictly enforced. Participants were not clear as to whether it was drivers, pedestrians, or both who needed to be subject to more stringent fines. The general sense was that even though the U.S. was more regulated in this regard than Latino countries, laws are still relatively lax regarding enforcement. They believe that issuing tickets with associated fines would improve the behaviors of drivers and pedestrians. Fines should be at least $40 for infractions such as jaywalking, and many people in the groups supported even higher fines.

m. Safety solutions: Respect and education

Another common solution offered to this problem was the need for more general respect and education among pedestrians and drivers. Partly, this is tied to a need to recognize that certain behaviors and practices are dangerous. However, pedestrians, and recent immigrants in particular, need more traffic safety education. For example, this education could explain what crosswalks are, and what the crosswalk symbols mean. Pedestrians also thought that it was important for drivers to respect pedestrians, including yielding to pedestrians and being alert for pedestrians.

n. Overall interest

Participants said that they were personally interested in this topic, and that the Hispanic community in general would also be interested in this issue. However, this issue was not seen as more pressing than other social concerns (e.g. crime or education). The most compelling statistic seems to be that Hispanics are significantly overrepresented, by a factor of two, in such crashes. This statistic makes people interested in this topic.

o. Hispanics' suggestions for public outreach on this topic

Participants mentioned several places they would like to see more information on this issue distributed. These places include television (e.g. Univision), radio, public transit stations, commercials, soap operas, soccer games, PSAs, churches, schools, and supermarkets. All such materials should be bilingual. Participants are not interested in receiving information via the Internet. Materials also should include graphics and other visuals, and not rely too heavily on text. Participants also had some ideas for the content of such a campaign. These include stopping at every light, looking both ways before crossing the street, obeying the laws, respecting the lights, crossing only in pedestrian walkways, and education about what to do at yellow lights and about how cars can slide in snow and bad weather.

5. Detailed Findings for Bicyclist Focus Groups

The findings reported here are from the four focus groups that focused on issues related to Hispanic bicycle safety. The findings are topically organized.

a. Where and how often Hispanic bicyclists ride

Participants reported a range of bicycling behaviors. Many rely on their bicycle as a means of transportation to get to and from work, to run errands, and for leisure activities or exercise. One participant reported using his bicycle for work as a bicycle courier in New York. Some participants combined their riding with other forms of transportation (e.g. the bus), and were more likely to use alternative transportation in bad weather or at night. They reported biking anywhere from fifteen minutes to an hour per day, with the exception of the bike messenger who reported riding eight to ten hours each day. Although most riding occurs during the day, one participant did enjoy riding at night, when there was less traffic. There was a wide range of rider characteristics, with participants having been bike riders anywhere from a few months to 25 years. Some participants believed that Hispanics were more likely to ride bikes than other ethnic groups, because they tend not to own cars as frequently.

b. General awareness of traffic signs and regulations

Participants in all cities reported that they are familiar with some aspects of the traffic system, including traffic signs, signals, and laws. However, their knowledge was somewhat vague, and many had questions about whether their recollections of the law were correct and what specific things the law required. For example, is it legal to ride on sidewalks? This is in contrast to pedestrians, who generally reported that they know the laws, but do not always follow them (an exception is that crosswalks were not well understood by either group). Other bicyclists had an awareness of the law, but reported that they felt safer sometimes breaking the law, e.g. riding against the traffic flow, riding on sidewalks, or crossing in the middle of the street.

c. Sources of information about traffic signs and regulations

Participants in these focus groups reported that there are several disparate sources of information for bicyclists about traffic laws and signs, but there is nowhere they can acquire general information on this topic. They mentioned that they currently receive information from the news, bicycle associations, newspapers, the Internet, police officers, or through personal experience. The groups felt that biking rules are not well publicized; several participants even questioned if such rules existed. Group members were interested in learning more about biking laws in general; in particular, they want to know more about their rights as bicycle riders. They would like such materials to be available to them in Spanish.

d. Bicyclists' perceptions of danger

These bicyclists reported a variety of situations and places that they considered threatening or dangerous. For example, they mention that there is often not enough room for bicyclists on the streets, and, subsequently, cars pass too close to them. They also note that often there are no pathways or signs to indicate where they should go. Other concerns include: intersections where vehicles turn on red lights; bad weather or riding at night; children who run into the street; hostility from drivers; areas with too much traffic; inconsistent bike lanes; construction areas; numerous pedestrians in crosswalks; and, a lack of security in certain neighborhoods. These dangers make them more likely to disobey the law, which, in certain situations, makes them feel safer. For example, bicyclists sometimes prefer to ride against the traffic, even though they know they are not supposed to do this. Almost all bicyclists agreed that there were numerous safety concerns for bicyclists, even leading to some reluctance to think about these risks. One participant noted: "I don't think of anything, so that I don't become nervous."

e. Safety measures and safety precautions

These participants reported being aware of a variety of safety measures. Some participants used such measures, while others did not, for reasons such as cost, appearance, and discomfort. Safety measures mentioned include: respecting the signs and laws; finding safer routes where there was less traffic or specific bike paths; walking across intersections after pedestrians and cars have passed; watching car signals; being alert by making eye contact with cars and looking over your shoulder; checking brakes; wearing proper shoes and helmets; and, reducing speed as they approach corners. At nighttime or in adverse weather conditions, most participants reported that they take extra precautions such as wearing reflective clothing, using lights on their bikes, or riding on the sidewalk. However, only a few participants reported that they avoid going out at these times. Hispanic bicyclists, then, appear to take more safety precautions than Hispanic pedestrians, but such precautions are still far from universal. Bicyclists also offer several suggestions to improve safety. These include: the need for more bicycle repair shops; the need for more affordable safety devices; adding mirrors to bicycles;

adding places to store a bicycle in the city; and, creating and offering a formal bicycle course for new immigrants.

f. Risk-seeking behaviors among bicyclists

These participants openly discussed some of their biking behaviors that might pose a hazard to themselves or others. For example, many reported actions such as crossing the street where there is not an intersection, not stopping for red lights, not wearing safety gear, and being careless at times. Additionally, a few participants admitted to riding their bicycles after drinking alcohol. These risk-seeking behaviors were not seen as particularly harmful by group members, and, in some cases, bicyclists reported that they felt justified in their behaviors. These behaviors seem to be motivated by convenience and a desire to save time. In fact, some participants even said that when they are biking certain places (e.g. to work) they will not take safety precautions if these measures add time to their commutes.

g. Personal knowledge of accidents

About half of these participants reported that they had knowledge of someone (including themselves) who had been involved in an accident while a bicyclist. These included personal incidents, incidents involving friends, family members and colleagues, and incidents they had observed. While pedestrians are sometimes involved, most crashes seem to occur between bicyclists and cars; however, bicyclists cite pedestrians as the cause of several crashes. These crashes occur quite often: one participant in New York reported that he personally had "near misses" daily. Indeed, the New York group reported more accidents than participants in any other city. Causes of accidents mentioned included car passengers opening doors in the path of bicyclists, poor road conditions, dogs, children running in front of bicyclists, and car drivers running red lights or not noticing bicyclists in crosswalks. Some accidents were reported to the police, but most were not. Hispanics appear to be less likely to report accidents for a variety of reasons. These include: Hispanics are less likely to know their rights or to have proper legal documents; Hispanics experience language barriers; some Hispanics are afraid of U.S. police; and, Hispanics may have a cultural belief that such crashes should not be handled by the police.

h. Groups seen as most likely to be in an accident

Overall, focus group participants reported children as most likely to be in an accident, but also mentioned new immigrants, seniors, and those who are less informed about the laws as being at increased risk. Hispanics are not seen as more likely to be in accidents than other groups.

i. General Hispanic cultural differences

Focus group participants reported several general cultural differences that affect bicyclist safety in the Hispanic community. They say that the U.S. in general is quite different from Latino countries, including differences in language and weather. Additionally, these Hispanics reported that their culture encourages fatalism and risk taking, although they try to avoid accidents. They say that Hispanics often have more dangerous jobs than non-Hispanics, and that Hispanic neighborhoods in the U.S. are less safe because of limited respect for bicyclists, increased crime, and a higher population density. At the same time, they do not think that Hispanics are any different than anyone else, and some people feel safer in Hispanic neighborhoods.

j. Differences in traffic between Latino countries and the U.S.

These bicyclists seemed to agree that basic traffic laws are similar between the U.S. and their home countries, but also that laws are enforced more stringently in the U.S. Therefore, they report that many Hispanics are not used to obeying traffic laws. Additionally, automobile ownership is more common in the U.S., and many Latinos who immigrate to this country have never driven before, putting them at a disadvantage in understanding the behavior of cars. Additionally, Hispanics report that traffic and people move at a quicker pace in the U.S., and that they are not very familiar with some U.S. traffic signs. For example, walkways and crossways were unfamiliar to many of these participants, as are any signs where the text is only in English. Seasonal differences were also somewhat unfamiliar to these participants, most of whom come from warmer clients. A few respondents downplayed these differences, however.

k. Country of origin differences

Participants agreed that although each Hispanic culture is unique, cultural differences as they pertain to bicycle safety are relatively minor. They report that Hispanics share much in terms of core traits, religion, and language.

l. Safety solutions: Signs and pathways

In thinking about these bicycle safety issues, participants felt it would be beneficial to have clear and helpful signs for bicyclists. They think these signs will be most helpful if they rely on graphics, and not text, to convey information. In addition, they felt that additional pathways for bicyclists would help them to avoid pedestrian and car accidents, and that these pathways need to be well marked. As noted above, and also in the pedestrian group, a better explanation of crosswalks and walkways for pedestrians and bicyclists would also be helpful for Hispanics.

m. Safety solutions: Respect the traffic code

Another common solution was the need for general respect and education among bicyclists. As was mentioned earlier, participants felt that it would be helpful to create a bicycle education class for new immigrants, where information could be disseminated in a way that is easily understood. Overall, they added that there must be a mutual respect on the roads between cars, bicycles, and pedestrians. They emphasized that bikers need to be alert, careful, and respectful.

n. Overall interest

Overall, participants expressed interest in this topic. However, traffic safety concerns are not as important as basic needs such as health, education, and immigration. Still, participants would be receptive to additional information on this topic, especially information designed for new immigrants where they perceive a great need.

o. Hispanics' suggestions for public outreach on this topic

Participants mentioned several places they would like to see more information on this topic. These include: media outlets (radio, newspaper, television, and magazines); doctor's offices; churches; schools; community centers; bus shelters and other public transit areas; the Internet; supermarkets; libraries; Hispanic neighborhoods; motor vehicle offices; and, bike stores. They also thought that word of mouth would be a good way to spread this type of information. Advertising campaigns with commercials, posters, flyers, bumper stickers, and a bicycle race to raise awareness were also suggested as ways to reach the community. Participants also felt that it was important to produce manuals and maps for bicyclists with more information. Nearly all participants felt that materials should be bilingual, and they emphasized the need for "simple language messages, so that everybody can understand." They also thought materials should be specifically targeted to children. They expressed the desire for information on "laws," "precautions," "risks," and "positive and negative things about [being] a bicyclist." Finally, the education of drivers on bicycle safety was seen as critical.

6. Focus Group Main Findings

The main findings from the focus groups are consistent with the findings from the partnership calls: Hispanics in the focus groups had not given much thought to these issues, but, when brought to their attention, they find them interesting and important. Participants were especially interested in the fact that Hispanics are overrepresented in pedestrian and bicycle accidents. The Hispanics in these groups see cultural differences as a main potential cause of accidents among Hispanics, and cite major differences in traffic laws and enforcement between Latino countries and the U.S. They report a general lack of education on these issues, and few Spanish-language sources of information. Basic information designed for Spanish speakers on this topic would be greatly appreciated and well received by these audience groups. Additionally,

participants said that new immigrants are particularly in need of such information. Participants did not think any one particular group of Hispanics (e.g. Mexicans, Puerto Ricans, and Central Americans) was most at risk, however.

The main findings from the focus groups are:

■ There are significant cultural differences that affect how Hispanics behave as pedestrians and bicyclists in the United States. Participants told us that traffic rules are enforced more stringently in the United States than in Latino countries, that the U.S. has more signs and regulations than Latino countries, and that police officers in the U.S. are less corrupt. In general, participants said that these differences made Hispanics more prone to "disorder" (e.g. jaywalking), and less likely to report accidents when they do happen. They said that Hispanic neighborhoods in the U.S. are also more disorderly as a result, and that these neighborhoods may also be home to more accidents.

■ Many features of the U.S. traffic system appear to be somewhat unfamiliar to Hispanics. Participants told us that many signs are the same across cultures, but that signs that rely heavily on writing in English can be confusing (e.g. the Yield sign or Walk/Don't Walk signals). Participants also told us that traffic moves faster in the U.S., and complained about inadequate amounts of time to cross the street in this country. Crosswalks appear to be less common in Latino countries.
Participants told us that new immigrants, in particular, are unfamiliar with U.S. traffic laws, placing them at potentially higher risk.

■ While U.S. drivers were seen as more respectful of pedestrians and bicyclists than those in Latino countries, participants still complained about a lack of respect from drivers. This is particularly a concern because Hispanics said that socio-economic disparities make them less likely to be drivers, and because in a crash "the car always wins."

■ Hispanic pedestrians and bicyclists reported that there is a lack of basic information on pedestrian and bicycle safety. Much knowledge on this topic appears to be spread informally peer to peer, and the result is vague knowledge about laws. This is especially pronounced among cyclists. All groups indicated that they have limited ways to learn such information. Many group members said their main source of such knowledge (other than their peers) was taking the driver's exam. Materials in Spanish are particularly lacking.

■ Participants reported that they sometimes knowingly do things that put them at risk. For example, almost all participants in the pedestrian group had jaywalked, and many cyclists say they do not always stop when it is required. These behaviors are primarily motivated by a desire to get to one's destination faster, and, to a lesser extent, by a belief in fatalism or destiny. In some cases, however, participants reported breaking the law to feel safer (e.g. biking on the sidewalk if the street is very busy).

■ Participants do take some safety precautions, such as trying to be alert, making eye contact with drivers, or wearing safety gear (e.g. helmets for bicyclists) or brightly colored clothing. Some behaviors are more common than others are, however. For example, most bicyclists did not report wearing helmets.

■ Pedestrians and bicyclists both cite automobiles as a primary cause of crashes and participants strongly believe that education on this topic needs to involve drivers as well as pedestrians and bicyclists. In addition, pedestrians cite bicyclists as a cause of crashes, and bicyclists cite pedestrians (especially children) as a cause of crashes. A lack of safe places to walk and ride is another cited cause of crashes.

■ Crashes are likely underreported for Hispanic pedestrians and cyclists. Many participants cited fear of the police and illegal immigration status as reasons Hispanics may not contact the police. Additionally, they say that reporting crashes is much less common in Latino countries. However, all examples of serious accidents mentioned in the groups (e.g. fatalities) were reported to the authorities.

■ Children, senior citizens, and recent immigrants were all thought to be more at risk of getting in crashes than other groups because of their lack of awareness, lack of mobility, and lack of acculturation, respectively. Focus group members did not think that country of origin made a significant impact in pedestrian or cyclist behaviors, and participants in all four cities identified similar themes and issues.

■ Group members thought that additional education on this topic and fines would help to address this problem. They felt that Hispanics need to be educated concerning U.S. traffic and safety rules. This education should take the form of booklets, guides, advertising, and other information campaigns. At the same time, monetary fines ($40-$75) were also seen as an effective way to underline the seriousness of such violations. Many participants said the only way they would learn would be to "get a fine."

V. Conclusions and Recommendations

Hispanic immigrants and persons of Hispanic descent are involved in a disproportionate number of pedestrian and bicyclist crashes. Hispanics represent the fastest growing population group in the United States. The Federal Highway Administration and the National Highway Traffic Safety Administration (FHWA/NHTSA) should target pedestrian and bicyclist safety programs for Hispanics.

■ Local pedestrian and bicycle safety programs targeted at Hispanics should focus on the specific pedestrian/bicyclist problems being experienced in each community. Pedestrian and bicycle safety problems in Hispanic communities may be different than those elsewhere. For example, the national pedestrian and bicyclist crash statistics suggest that Hispanic children are less involved than non-Hispanic children but that Hispanic young adults are more involved. It also appears that Hispanics of Mexican origin and Hispanics of Central/South American origin are more involved in pedestrian and bicyclist crashes. The role of alcohol in both pedestrian and bicyclist crashes should also be addressed.

■ FHWA/NHTSA should consider designing and implementing a campaign for Hispanic pedestrians, bicyclists, and drivers around the idea of "respect." This respect needs to flow mutually among all parties, and should include respect for the law as well. Such a campaign should be broadly targeted, but should include Spanish and bilingual materials.

■ Hispanics, and recent immigrants in particular, need information that is bilingual and that clearly explains common U.S. traffic laws, signs, rules, and behaviors. Such a guide should be available in Hispanic community centers, government offices, schools, and other locations. A guide should also explain the various safety devices that are available, how they work, and what they cost.

■ Information campaigns for Hispanics should focus on the need to obey U.S. traffic laws such as stopping at lights and crossing only in crosswalks. Other topics that are likely to be of interest to Hispanics include information on how cars react to snow and ice, how to use crosswalks, pedestrian/cyclists rights and responsibilities, and that Hispanics are more likely to be involved in such crashes and therefore need to be more alert.

■ Focus group members emphasized the importance of using graphics on traffic signs for non-English speakers and low literacy individuals, and indicated that they might be more willing to use safety devices (e.g. bicycle helmets) if such devices were available for free or at a reduced cost.

■ Additional research is needed to more precisely target the characteristics of Hispanics involved in pedestrian and bicyclist crashes. It is not known if the Hispanics that are involved in these crashes are born in this country or if they are immigrants - documented

or undocumented. This information is needed in order to identify the target population of safety efforts and develop effective programs and messages.

■ Additional research is needed to determine the kinds of crashes – both pedestrian and bicyclist – that Hispanics experience. Crash typologies – both pedestrian and bicyclist – were developed over 30 years ago, before there was a significant Hispanic presence in this country. Detailed accident causation research is needed to determine if existing accident typologies are adequate or if additional accident types are being experienced by Hispanic pedestrians and bicyclists.

■ The detailed analysis of the Fatal Accident Reporting System data in this report showed that non-Hispanic Blacks, as well as Hispanics, are over-represented in many kinds of pedestrian and bicyclist crashes. Additional research is needed to determine if significant safety benefits can be obtained by targeting non-Hispanic Blacks and other minority groups.

VI. References

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